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TECH CENTER 1600/2900

<110> COLE, STEWART
BUCHRIESER-BROSCH, ROLAND
GORDON, STEPHEN
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<120> A METHOD FOR ISOLATING A POLYNUCLEOTIDE OF INTEREST
FROM THE GENOME OF A MYCOBACTERIUM USING A BAC-BASED
DNA LIBRARY. APPLICATION TO THE DETECTION OF
MYCOBACTERIA.

<130> 05394.0011-00000

<140> 09/673,476

<141> 2000-11-30

<150> PCT/IB99/00740

<151> 1999-04-16

<150> 09/060,756

<151> 1998-04-16

<160> 743

<170> PatentIn Ver. 2.2

<210> 1

<211> 12732

<212> DNA

<213> Mycobacterium tuberculosis

<400> 1

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<210> 2
 <211> 289
 <212> DNA
 <213> Mycobacterium tuberculosis

53941100

<400> 2
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accaatgtgc acgccattgt cgagcaggca ccggtgccag cccccgaatc cgggtgcacca 180
ggcgacaccc cggccacacc cggtatcgac ggcgcgctgc tgttcgcgct gtcggccagc 240
tcgcaggacg cgctgcggca aaccgccgcg cggctggccg attgggtct 289

<210> 3
<211> 278
<212> DNA
<213> Mycobacterium tuberculosis

<400> 3
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ggatctggtg attttgcggg ctacccgcga ttacccgcg cggctcgacg agtttttggc 180
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cgccgttcac ctacgtgacc ttgatgggat ccgggggt 278

<210> 4
<211> 1280
<212> DNA
<213> Mycobacterium bovis

<400> 4
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gcgcctgtg cccggcacc cgcgcgttt gtcggcaac ccgccgcgac ccgtgagccg 1260
tccagcagct ggcgcctgag 1280

<210> 5
<211> 127
<212> DNA
<213> Mycobacterium bovis

<400> 5
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cggtcagtta tggggtagcg gcggcgcccg cgtcgaaggc ggcgcagcct taagcgtcgg 120
cgacacc 127

53941100

<210> 6
<211> 434
<212> DNA
<213> Mycobacterium tuberculosis

<400> 6
aataactcaag cttgcccagc cgtcgatgac aagaaatatg tccgcaaaag actcagcggc 60
cgacttttgc cgcagctggc ggtaccgcgc caccgattct atgccgtggc cgcggaaaaa 120
tgcctcccga aatcgcacgc ccgactccag ttcggcgagc atccgcgatg ccagctgcgg 180
ctgcgccctg ccggccacgc caccacatg cggcagttcg tccacctggg ccagcgcccc 240
gccgccgaat tccaaacaat agaactgcac ccggcccgcg tcgtgggtaa cagccaacgc 300
catgatcagc gtccgcagcg cggttgactt gcccgtttgc ggtgcaccta cgaacgcgac 360
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attgaaattc cgat 434

<210> 7
<211> 332
<212> DNA
<213> Mycobacterium tuberculosis

<400> 7
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cacctcgcgt cgccctccga ccgcgaacat tcggggatgg cagcaacctg ctggcaccct 180
ggccggcgca tgatctgcag cgtcgccgcg ggtagtcgcc gcccgggcgg ctacactctg 240
aaacgcgatg accatcgatg tgtggatgca gcatcccgac gcaacggttc ctacaccgcg 300
atatgttcgc ctgcgtgccc cggtggaccg gt 332

<210> 8
<211> 354
<212> DNA
<213> Mycobacterium tuberculosis

<400> 8
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tccgctgaca gcggcgggat cccaaagtgc ggatgatcgg gccgcctacg tcgtgggtgta 120
cctcgtcggg aacaacgaaa ccgaagcgta tgactcggtc cacgcggtgc ggcacatggc 180
ggacaccaca ccgccaccgc acggggtgaa ggcctatgtc accggtccgg cagcactcaa 240
tgccgaccag gccgagggcg gagacaaaag tatcgctaag gtcaccgcga tcaccaacat 300
ggtgatcgca gcaatgttc tagtgatcta tcgctccgta attaccgcgg ttct 354

<210> 9
<211> 353
<212> DNA
<213> Mycobacterium tuberculosis

<400> 9
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aagcagctga tcgagctaca acgccgcgcg gaacgcttcc gccgcgggcg tgaccgcac 180
ccgttgaccg ggcggatcgc ggtgatcgtc gatgacggca tcgccaccgg agcgacggcc 240
aaggcggcgt gccaggtcgc ccgggcgcac ggtgcggaca aggtggtgct ggcgggtccc 300
atcggccccg acgacatcgt ggcgagattc gccgggtacg ccgatgaggt ggt 353

<210> 10
<211> 279
<212> DNA
<213> Mycobacterium tuberculosis

53941100

<400> 10
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gcccaagccc gtaccaatca gcccggaac gagggattcc gtcattatca gccaaaataa 180
ctgctctcgg gttacacca aacagcgcaa tatggcgaaa aacggtcgcc gttgcacgac 240
attaaatgtc acggtattgt agattaaaaa gataccac 279

<210> 11
<211> 376
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (99)
<223> a, t, c or g

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gacggcacgc caagttcgcc gaccgttaac ctagtgtgt tagcttcatt tgctgcgac 180
aaaacagctg gtcggccgtt aggaactgaa ttgaaactca accgatttgg tgccgccgta 240
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gggggaggtg caaccactgg ccaggcgtcg gcaaaggctg attgcggggg gaagaagaca 360
ctcaaagcca gtgggt 376

<210> 12
<211> 393
<212> DNA
<213> Mycobacterium tuberculosis

<400> 12
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gacgattttg gcgtagccgg cggacgtctg ctcgattccg atcacgtcgg cgctcgcac 120
gagcatggcg ccggcgacgg ctagcagcga tccgccgtcg tcgaggagca cgacacgagc 180
cgtacgcccg gccgtaagcc gcgcccagga ttcggcgaaa aaccgttcta cgtggcgggt 240
gtactgggtg tcgaatgatt cgtgggggtgc gtaggcgtcg ctgcaatcgt cgacatagat 300
gccgtcgggc cgcacgcgt cgacaactcc gggtagtggt aatagcactt gccgatcacc 360
gcgacgttgc gcggatgagg ccgaaccgca ata 393

<210> 13
<211> 272
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (21)
<223> a, t, c or g

<400> 13
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gacggtgagg tcgaagtitt ccaggaattc ggcaaaatcg gtaagagcct gaagaattcg 120
gtatcgccgg acgaaatctg cgacgcatac gggggcatat acgcttcggg ttacagagat 180
gtcgtatggg ccgctggagg cttcacgtcc atgggcccaca aaggatgttg tcggcgcgta 240
ccgttttctg cagcgggtgt ggcgcttggt cg 272

<210> 14
<211> 286

53941100

<212> DNA

<213> Mycobacterium tuberculosis

<400> 14

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accacccggc	tgcgctacgt	ctaaccattc	caggcggagc	tacatcagct	cggccgccc	180
gtgttcggg	cctctttcca	ggtcgaagtc	tataccgata	tgcgcatccg	cagccgccac	240
cctggagaac	agaacgatgc	cctactaatg	cttgtctggc	ggggcc		286

<210> 15

<211> 357

<212> DNA

<213> Mycobacterium tuberculosis

<400> 15

ggtacgcttc	ggtcgcagtc	tgcgagtgat	gcatgacgac	cgggacctcg	tcggcatctt	60
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gctcggcatt	ggtcatcggg	atatgccgct	cgggacggtc	agagccctcg	ggtccggcca	180
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ggtctgcgcg	aatcaccagc	acgtagacgg	ttcctttcct	aagcaacacc	gaagtttcag	300
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<210> 16

<211> 83

<212> DNA

<213> Mycobacterium tuberculosis

<400> 16

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<210> 17

<211> 383

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (5)

<223> a, t, c or g

<220>

<221> modified_base

<222> (190)

<223> a, t, c or g

<220>

<221> modified_base

<222> (268)

<223> a, t, c or g

<220>

<221> modified_base

<222> (279)

<223> a, t, c or g

<220>

<221> modified_base

<222> (382)

<223> a, t, c or g

<400> 17

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catggtcgan gatgcattcg agaccatatt cgaaattggg ttcatcgggg gccccgatcc 240
gatgccccct cccagttgcg tgagcaanca gcggagtcnt cgcgggatcg atggccacgg 300
ggtgttcaat ggcggatggt ccgctgcccg ccgactggct cttgcgggag aaccgatcta 360
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<210> 18

<211> 603

<212> DNA

<213> *Mycobacterium tuberculosis*

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<223> a, t, c or g

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<222> (17)

<223> a, t, c or g

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<222> (21)

<223> a, t, c or g

<220>

<221> modified_base

<222> (38)

<223> a, t, c or g

<220>

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<222> (51)

<223> a, t, c or g

<220>

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<222> (82)

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<222> (100)

<223> a, t, c or g

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<222> (103)

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 <222> (578)
 <223> a, t, c or g

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<210> 19
 <211> 190
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
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<223> a, t, c or g

<220>

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<222> (94)

<223> a, t, c or g

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<221> modified_base

<222> (179)

<223> a, t, c or g

<400> 19

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<212> DNA

<213> Mycobacterium tuberculosis

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<222> (154)

<223> a, t, c or g

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<222> (225)

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<222> (229)

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<210> 21
 <211> 388
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
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 <223> a, t, c or g

<220>
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<220>
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 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (227)..(228)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (232)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (264)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (352)
 <223> a, t, c or g

<400> 21
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 ggcgcaggct atcgcacccg ttatcngcta cgaacaaatc ncggtatgcg ttctttanca 120
 tgagtcggcg accgncgatc atggtcgaca cccacgacng aaatacgag atcgccntcn 180
 agcntgtgtg ccgcggtatta tcangactga cctcctggct gaccggnntg tntggtcgcg 240
 atgcctggcg cccggccggc gtgntcgtgg tcggctcgga tagcgaagtc agctaattct 300
 cgtggcagct cgaaagggtc ctgccggtgc cggctcttgc gcaaaccatg cncatgttac 360
 ggtccctcgg gtgcggcctg gcggcggc 388

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<210> 22
<211> 138
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (51)
<223> a, t, c or g

<400> 22
gggatgggcg ggcccgctaa actcttcgtg ttccactaac tccgggaggg ncaatctcgg 60
gccgttatgg ctcacgtcgc gtcgccctcc gaccgcgaac attcggagtt ggcagcaacc 120
tggtagcacc ctggccgg 138

<210> 23
<211> 142
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (1)
<223> a, t, c or g

<220>
<221> modified_base
<222> (131)..(132)
<223> a, t, c or g

<400> 23
nccgtcgttg acaagtaa atgtccgcaa aagtctcagc ggccgacttt gctcgcaggt 60
ggcgggtaccg cgccaccgag tcgatgccgt ggtcgcggaa gaatgcctcc cgaaatcgca 120
cggccttccc nntttaaacg ga 142

<210> 24
<211> 441
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (136)
<223> a, t, c or g

<220>
<221> modified_base
<222> (166)
<223> a, t, c or g

<220>
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<222> (208)
<223> a, t, c or g

<220>
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<222> (251)
<223> a, t, c or g

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 <222> (295)
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 <223> a, t, c or g

<220>
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 <222> (334)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (349)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (354)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (377)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (405)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (437)
 <223> a, t, c or g

<400> 24						
tttaggtgac	actatagaat	actcaagctt	ttggtctagc	cggccgagca	cgatacgggt	60
gtcattggcc	accggcggcg	gctgtccggg	aaatggcggg	tccccggtgg	ttttgctgat	120
gagtgtgaa	ccgtantcga	agtgggcggc	gtcagactcc	acccanccag	caggcagcgc	180
gaagctgaat	cctccaaccg	ggttgtcnat	ccggacaagt	tggggtgcgt	ttggggcaat	240
gacaggtggc	ngcgggtgcgt	tcgggtccgc	cggcggaagt	gctgcgttgg	gatcncccgc	300
tgggcattcg	gcntttttgc	ggcggccggt	ggtngggggg	caacaggtnt	cccngtgcgg	360
gtggcgctca	acggtcnacg	gcgcaagccg	ccgttggttg	taccnngggc	gctggctccg	420
gacgcggttg	gcggtcnccg	g				441

<210> 25
 <211> 453
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (29)
 <223> a, t, c or g

<220>

<221> modified_base
<222> (199)
<223> a, t, c or g

<220>
<221> modified_base
<222> (280)
<223> a, t, c or g

<220>
<221> modified_base
<222> (302)
<223> a, t, c or g

<220>
<221> modified_base
<222> (325)
<223> a, t, c or g

<220>
<221> modified_base
<222> (331)
<223> a, t, c or g

<220>
<221> modified_base
<222> (368)
<223> a, t, c or g

<220>
<221> modified_base
<222> (374)..(375)
<223> a, t, c or g

<220>
<221> modified_base
<222> (395)
<223> a, t, c or g

<220>
<221> modified_base
<222> (401)
<223> a, t, c or g

<220>
<221> modified_base
<222> (423)
<223> a, t, c or g

<220>
<221> modified_base
<222> (426)
<223> a, t, c or g

<220>
<221> modified_base
<222> (432)
<223> a, t, c or g

<220>
<221> modified_base
<222> (444)
<223> a, t, c or g

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<400> 25
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gaccctcaac gccattgccg gcacctacta cgtgcactcc aactacttca tcctgacgcc 120
ggaacaaatt gacgcagcgg ttccgctgac caatacggtc ggtcccacga tgaccagta 180
ctacatcatt cgcacggana acctgccgct gctagagcca ctgcgatcgg tgccgatcgt 240
ggggaaccca ctggcgaacc tggttcaacc aaacttgaan gtgattgtta acctgggcta 300
cngcgacccg gcctatgggt attcnacctc nccgccaat gttgcgactc cgttcgggtt 360
gttcccanaa gtcnncccgg tcgtcatcgc cgaanctctc ntcccgggac ccacagggaa 420
tcngcnattt cncctacaaa tcanccacct cca 453

<210> 26
<211> 228
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (180)
<223> a, t, c or g

<220>
<221> modified_base
<222> (224)
<223> a, t, c or g

<400> 26
gcatgatcgg ccacctttcg ggccgcccgg catacggcgg cgtaccgatc tccgcgtcat 60
acacccgcgg gtaatcgccg acggtgccgg ttcgcgagcc gaagggtgacg actctgattg 120
aatcgagttc cagggtccagc ggggtggcga ccaacggcgc gagctcaacg acgtcaatcn 180
cgttgtcgct ttctacggtc accgaccctg gtgaccgtag ttcncccg 228

<210> 27
<211> 357
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (53)
<223> a, t, c or g

<220>
<221> modified_base
<222> (161)
<223> a, t, c or g

<220>
<221> modified_base
<222> (226)
<223> a, t, c or g

<220>
<221> modified_base
<222> (242)
<223> a, t, c or g

<220>
<221> modified_base
<222> (306)
<223> a, t, c or g

<220>
 <221> modified_base
 <222> (335)
 <223> a, t, c or g

<400> 27
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 ccgcccagacca gtacgaacca acctgcggtg cccaggccat tgacgatgtg ctggtcggcg 120
 cccgcgagtc cgcgcacccat caacgccgcg ggcaccacca nggcggcccc accctgcacg 180
 gcgacgatca ttccggcgcc gctcacggcg ggcggggctc gaacangcac agcatcaacg 240
 tngtcacccg gccgtgaccg gcccgcacgcg tcacaccacc caagcccatt gccgtcctcc 300
 tcaacngggc gaccggcccc gcatcgtcac acggnctaag gccattgccg tcctcct 357

<210> 28
 <211> 384
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (48)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (69)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (115)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (136)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (139)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (146)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (157)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (182)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (236)

<223> a, t, c or g

<220>

<221> modified_base

<222> (246)

<223> a, t, c or g

<220>

<221> modified_base

<222> (253)

<223> a, t, c or g

<220>

<221> modified_base

<222> (256)

<223> a, t, c or g

<220>

<221> modified_base

<222> (264)..(265)

<223> a, t, c or g

<220>

<221> modified_base

<222> (274)

<223> a, t, c or g

<220>

<221> modified_base

<222> (278)

<223> a, t, c or g

<220>

<221> modified_base

<222> (280)

<223> a, t, c or g

<220>

<221> modified_base

<222> (290)

<223> a, t, c or g

<220>

<221> modified_base

<222> (301)

<223> a, t, c or g

<220>

<221> modified_base

<222> (312)

<223> a, t, c or g

<220>

<221> modified_base

<222> (314)

<223> a, t, c or g

<220>

<221> modified_base

<222> (321)

<223> a, t, c or g

<220>

<221> modified_base
 <222> (335)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (337)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (349)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (358)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (377)
 <223> a, t, c or g

<400> 28
 tcggcgccat cggcaccttc gaggacctgt atttcgacgc cgtggccnac ctgaggttgg 60
 cgggtggacna agtgtgcacc cggttgattc gctcggcctt gccggatgcc acccngcgcc 120
 tgggtggtcga tccgcnaana gacaanttgt ggtggangct tctgctgcct gcgacaccca 180
 cnacgtgggtg gcaccgggca gctttagctg gcatgtcctg accgcgctgg ccgacnactc 240
 cagacnttcc acnaanggtc gccnncccaa tgtnccgnan tgtctccggn tccctttacc 300
 ncccaatggg cngnttccac nggttacggg ccccntnccg gcgggtctnc ctcccaanct 360
 accaaatacg cccgacnttc cgga 384

<210> 29
 <211> 266
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (163)
 <223> a, t, c or g

<400> 29
 atactcaagc ttttatgggtg atcgcgcac atctggttca tgaactggaa gcagcgcagc 60
 gcttcctttt cggccgcaac atgagccagc ctctcgtcgg cggtcgggtg caggtgctcg 120
 ggcagctcgg ccgcgaacag cccggcttga accctgaaaa ccngctttcc atatcccgcg 180
 acgaaagaac gccagtccg ctacttaacc cctccgcgaa ccgtccatgg acaacagcgc 240
 gttctccacc aaccgggccc ggggtg 266

<210> 30
 <211> 423
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 30
 tcggctcagg ccgcgctgct ggtagagtcg ctgaccgggtg caggtttcga caatgtgggtg 60
 ccggttcggc ggctacgtgc catcgagaca ctggcgcagg ctatcgcacc cgttatcggc 120
 tacgaagcaa atcgcggtat gcgttcttga gcatgagtcg gcgaccgtcg tcatgggtcga 180
 caccacgac ggaaagacgc agatcgccgt caagcatgtg tgccgcggat tatcaggact 240
 gacctcctgg ctgaccggca tgtttggctg cgatgcctgg cgcccggccg gcgtgggtcgt 300

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ggtcggctcg gatagcgagg tcagcgaatt ctcgtggcag ctcgaaaggg tcctgccggt 360
gccgggtcttt gcgcaaaca tagcgcaggt tacgggtcgcg cgggggtgcgg cctggcggcg 420
gcc 423

<210> 31
<211> 455
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (94)
<223> a, t, c or g

<220>
<221> modified_base
<222> (195)
<223> a, t, c or g

<220>
<221> modified_base
<222> (216)
<223> a, t, c or g

<220>
<221> modified_base
<222> (282)
<223> a, t, c or g

<220>
<221> modified_base
<222> (446)
<223> a, t, c or g

<400> 31
caagctatTT aggtgacact atagaatact caagcttcgc gtctacgccg gcccggagca 60
tccgcacagc gctcagcagc cggttccgta cgantcCaag cagggtggcg aatgaccgaa 120
accaccccag ccccgcaaac cccggcggcc ccggccgggc ccgcacaatc gttcgtgttg 180
gagcgcccca tccanaccgt tgggcgccgt aaggangccg tggtagaat gcggctggtg 240
cccggcaccg gcaagttcga cctcaacggc cgcagcttgg angactactt cccaaacaag 300
gtgcaccagc agttgatcaa ggcacccctg gtcaccgtgg atcgggtgga aagtttcgac 360
atctttgccc acctgggcgg cggcggccgt ccggtcaggc cgggcctgcc ctgggtatcg 420
cccgggcatt gattctggtA tcccngaag aaccg 455

<210> 32
<211> 371
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (352)
<223> a, t, c or g

<220>
<221> modified_base
<222> (371)
<223> a, t, c or g

<400> 32
cggttgGCCa ccgcttctgc ggtgccgccg ccgtcgacaa tgaccgtgtc gtccttgctg 60

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accaccacgc gtcggggccga gcccagcacc tccaagccca cctcgcgcag caccatgccg 120
gcgtcgggggt tgaccacctg gccacccgctc accaccgcca ggtcctcaag gaaacgcctt 180
acggcggtca ccgaagtacg gcccccttgac cgcgaccgct ttcaacgtct tgcgaatcgc 240
gttgacgacc agcgtcgcca acgcttcgcc ctccacgtct tcagccacga tcagtagtgg 300
cttaccgcgtt cctgcaacct ttccagcaa tggcaacaga tcgggaagcg anctgatctt 360
gtcttggtgc n 371

<210> 33
<211> 320
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (62)
<223> a, t, c or g

<220>
<221> modified_base
<222> (85)
<223> a, t, c or g

<220>
<221> modified_base
<222> (160)
<223> a, t, c or g

<220>
<221> modified_base
<222> (165)
<223> a, t, c or g

<220>
<221> modified_base
<222> (204)
<223> a, t, c or g

<220>
<221> modified_base
<222> (217)
<223> a, t, c or g

<220>
<221> modified_base
<222> (260)
<223> a, t, c or g

<220>
<221> modified_base
<222> (279)
<223> a, t, c or g

<220>
<221> modified_base
<222> (282)
<223> a, t, c or g

<220>
<221> modified_base
<222> (292)
<223> a, t, c or g

<220>
 <221> modified_base
 <222> (300)..(301)
 <223> a, t, c or g

<400> 33
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 cngcgtgcac cgctatgggt tgcancagcg gctggcgccg cacacccac tggcccgggt 120
 gttttcgccc cgaacccgga tcatgggtgag cgaaaaggan attcncctgt tcgatgctgg 180
 gattcgccac gccaaggcat ctancgatta ctctccncgg ggtgggaaaa gtgccaatc 240
 cccctccctc caactttccn aacaatcatt ccggttcnc cntccggtg gnggtaaccn 300
 nccaataaaa cccctgcccg 320

<210> 34
 <211> 383
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (7)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (74)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (189)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (196)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (198)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (224)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (238)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (323)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (326)
 <223> a, t, c or g

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<220>
<221> modified_base
<222> (332)
<223> a, t, c or g

<220>
<221> modified_base
<222> (350)
<223> a, t, c or g

<400> 34
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cagcccccca ccantgccgc tcgaacatgc ggtgcaaccc attcgaggc cggcagggaa 120
agcaccgcgg aagccgcaaa gggctgcagt tccgcgcccc ataatgtcgt ccgcaaccag 180
atgcgctcna aaaccncncc ggcagtcagc gcacccgacg cgangtcgaa agacgtcntc 240
agcgcgcccc catgggggtgc caatcggcac ggcaggatg ccgcgcgcaa cccgagcgcg 300
tggtgcatgc ccacgggtccg cangangcgc ancacccgcc aatgccgaan cccacgaaac 360
atcgggcgca tccaccttca acc 383

<210> 35
<211> 275
<212> DNA
<213> Mycobacterium tuberculosis

<400> 35
atactcaagc ttgcccagcc gtcgatgaca agaaatatgt ccgcaaaaga ctcagcggcc 60
gactttgctc gcagctggcg gtaccgcgcc accgagtcga tgccgtgggtc gcggaagaat 120
gcctcccga ttcgcacggc caattccatt ccgggaagca tccgcaatgc cagctgcggt 180
tgccccctgc cggccacggc acccacttgc ggcatgtcgt ccacctgggc cagcgccccg 240
ccgccaaatt ccaaacaata aaaattgcac ccggc 275

<210> 36
<211> 322
<212> DNA
<213> Mycobacterium tuberculosis

<400> 36
ccacccgtgt attttgggat gggcaaaaag gcgaagcacc gcgtggccac gaacgccggg 60
agggacaatc tcgggcggtc agggcttctc gcgggaaggc ccgaacgtac ggcgtttcaa 120
cacgtcgcgt cgccctccga ccgcgaacat tcggggatgg cagcaacctg gtagcaccct 180
ggccgggcga tgatctgcag cgtcgccgcg ggtagtcgcc gcccgggcgg ctacagtctg 240
aaacgcgatg accatcgatg tgtggatgca gcatccgacg caacgggttc tacacggcga 300
tatgttcgcc tccctgcccc gt 322

<210> 37
<211> 167
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (126)
<223> a, t, c or g

<220>
<221> modified_base
<222> (134)
<223> a, t, c or g

<220>
 <221> modified_base
 <222> (137)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (141)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (147)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (164)
 <223> a, t, c or g

<400> 37
 ctgccccatgt ttgggggacgc ccgaccagcc gatgctggag gcctacacgg cccttggtgc 60
 gctggccacg gcgaccgagc ggctgcaact gggcgcggtg gtgaccggca atacctaccg 120
 cagcngacc cctntcncaa naggatnttg ttcgccggac cccnctc 167

<210> 38
 <211> 287
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 38
 ccgactttcc gcggtacccg ctcaactttg tgtcgaccct caacgccatt gccggcacct 60
 actacgtgca ctccaactac ttcacacctga cgccggaaca aattgacgca gcggttccgc 120
 tgaccaatac ggtcgggtccc acgatgacc agtactacat cattcgacg gagaacctgc 180
 cgctgctaga gccactgcga tcggtgccga tcgtggggaa cccactggcg aacctgggtc 240
 aaccaaactt gaaggtgatt gttaacctgg gctacgcgac cgccttt 287

<210> 39
 <211> 322
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 39
 atactcaagc tttgtcacac caagtgtttc gaccaggcgc tccatccggc gaggggatac 60
 tcccagcagg tagcaggtcg ccaccacgct ggtcagtgcg cgttcagctc gcttgccggc 120
 ctgcagcagc cattcgggga aatacctgcc ctggcgacg tgggggatcc caacttcaat 180
 ggttgccggca cgggtgtcaa attcacggtg gcggtagccg ttgccctaat tggaccgctc 240
 atcgctgctt tcgcggtacc ccgccccgca cagggtctcg gcttcagccc ccatcagggc 300
 ggcaataaac ttcaagagca cc 322

<210> 40
 <211> 471
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 40
 gaggcagctt cgccggcaat tctactagcg agaagtctgg cccgatacgg atctgaccga 60
 agtcgctgcg gtgcagccca ccctcattgg cgatggcgcc gacgatggcg cctggaccga 120
 tcttggtgccg cttgccgacg gcgacgcggt aggtgggtcaa gtccgggtcta cgcttgggcc 180
 tttgcggacg gtcccgcgac tggctcgcggt tgcgccgcga aagcggcggg tcgggtgccca 240

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tcaggaatgc	ctcaccgccg	cggcactgca	cggccagtgc	cgcggcgatg	tcagccatcg	300
ggacatcatg	ctcgcgttca	tactcctcga	ccagtcggcg	gaacagctcg	attcccggac	360
cgcccagcgc	attggtgatg	gaatcggcga	acttggccac	ccgctgggtg	ttgacatcct	420
cgacggtggg	caattgcgcc	tcggtaaagt	ttgccgcgta	gccttttcat	c	471

<210> 41
 <211> 247
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 41						
atactcaagc	ttcactgaca	agggacgaat	tcgtcggccg	cctgttcgac	tgggtgggtgg	60
ccgagctggt	cgccaccact	caggccgcgg	tcacggcggg	accggcgcg	gagcaaactc	120
gcgcgggcat	ggccaacttc	ttgcggacca	tcaccgcaga	cgcccgttgc	ggaccccctgc	180
tgccaccac	acagttggcc	aacgcattaa	tcaccgcgaa	gcttgcgga	tccaccgccc	240
tgttcgc						247

<210> 42
 <211> 325
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (19)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (121)
 <223> a, t, c or g

<400> 42						
tccatcaccc	gatgtggcng	gagcactgcc	atgtcgatct	caactaccac	ctccggccgt	60
ggcggttgcg	cgccccggg	ggtccgcgcg	aactcgacga	ggcggtcgga	gaaatcgcca	120
ncaccccgct	gaaccgcgac	caccgcgtgt	gggagatgta	cttcgttgag	gggcttgcca	180
accaccggat	cgcggtgggt	gccaaaattc	accatgcgtt	ggctgacggt	gttgccctcgg	240
caaacatgat	ggcacggggg	atggatctgc	cgccgggacc	ggaggtcggc	cgctatgtgc	300
ctgacccccg	tcctaccaag	cggca				325

<210> 43
 <211> 221
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 43						
agctttgcag	ttgctgagta	atgtcggcca	acgtcaccac	aaccgcgatg	aattcaatca	60
tgccgcccag	ggcggccaac	ccaatgggtg	ccgcgagcgg	cagctcgatc	gcagcgcgga	120
ggttgccggc	cgccagttga	ttcacgaaca	gggtgaggtc	ataggcgggc	aggatagtga	180
cgaaggcaag	acctccatct	gccgtcggaa	gaagtatcga	g		221

<210> 44
 <211> 285
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 44						
agcttcagaa	caggcctggt	gtgggcgcac	ccggctcgcc	gagttctgca	cgcaccgcct	60
caagtgcggc	ccgcaccgcc	ggcatctccc	ggtcacgcag	ggccgcggcc	cgcgccgcag	120

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cgacggcgtg ttcgcgcagt tcgccgtcaa tgatgctgac ctgatcggcc acccgggcgt 180
tctcggcgtc gtcgcgttca ctaatcgcg tgctcagcag cgtctcgaca gccaccaccc 240
gagtggcgac cagctgctcc accacggacc gcagcgaatgc ccgtc 285

<210> 45
<211> 179
<212> DNA
<213> Mycobacterium tuberculosis

<400> 45
atactcaagc ttcagttcct ccacgacgcg ttcccaaagt aatttcccga tcccacaatc 60
tcggttcaga tacaggctgc catacccctt acttcggcaa cgctgggcgg attggccctg 120
ccgctgcacc aaaccatcaa cgccttcaaa ttgccggcaa tctcgttcag ccaatccat 179

<210> 46
<211> 315
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (125)
<223> a, t, c or g

<220>
<221> modified_base
<222> (155)
<223> a, t, c or g

<400> 46
gctctacgcc gcctacgggt cgaacatgca tcccgagcag atgctcgagc gcgcacccca 60
ctcgccgatg gccggaaccg gctggttacc cgggtggcgg ctgacgttcg gcggcgagga 120
catcngctgg gaaggggagc ttgccaccgt cgtcnaagac ccaaattcga aggtgttcgt 180
cgtgctctac gacatgaccc cggcggacga gaagaacctt gaccgggtggg aagggtccga 240
gttcggtatc caccagaaga tccgatgccg cgtggagcgc atttcctcgg acaccacaac 300
gggatcccgt cctcg 315

<210> 47
<211> 285
<212> DNA
<213> Mycobacterium tuberculosis

<400> 47
atactcaagc ttgccaaaga gacctcgtcc accaagcagg acgcgaccgt cgaggtggcg 60
atccggcttg gcgtcgaccc gcgtaaggca aaccagatgg ttcgcggcac ggtcaacctg 120
cccacaccgg cactggttaa gaactgcccg cgtcgcggtt ttcgcggttg gtgaaaaggc 180
caatgcctgc gtttgccgtg ggggcggatg ttgtcgggag tgacaatctg atcaaaaagg 240
ttcagggcgg ttggctggaa ttcaatgccg caatcgcgac accgg 285

<210> 48
<211> 369
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (364)
<223> a, t, c or g

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<400> 48
ccacggcgtg gatcaaggta ccggccggga tgttgcgcaa tggcagggtg ttgcccggct 60
tgatgtcggc gtttagcgccg gattccacca catccccttg cgaaagtccg ttgggtgcaa 120
tgatgtagcg cttctcccca tcgagatagt ggagcaacgc aatccgtgcg gtacgggttcg 180
ggtcgtactc gatgtgcgcg accttggcgt tgacaccatc tttgtcattg cggcgaaagt 240
cgatcatccg gtaagcgcgc ttatgaccgc cgccctttgtg ccgggtggta atccggccat 300
gcgcggttgcg tccaccgcga cgtgcagcgg gcgcaccagc gacttctccg gggttgaccg 360
ggtnatctc 369

<210> 49
<211> 461
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (89)
<223> a, t, c or g

<220>
<221> modified_base
<222> (117)
<223> a, t, c or g

<220>
<221> modified_base
<222> (183)
<223> a, t, c or g

<220>
<221> modified_base
<222> (353)
<223> a, t, c or g

<400> 49
gcagcatgac ggcggtagcg aacaccgccc gatgcagcgc aagtagcgtc gatgtgctca 60
cggaatcgcc ccggcaccgc gatctcgang atcaccagtg ccacccccctg cagcgcgnaca 120
ccgacgattc cgtacaccgc cacgccgatac aggccctggg ccatctgatt ggagctggcg 180
tanatggcgg cgatggtgac gatggccagc gccacataca ttgtggcggc cagaaccacg 240
gcgttggggc ggcggtcgat gaacactagg cgacgcagat cgcccggggg caacagggtt 300
accatcagaa agcctgcgac tagcacggcg gcgccactag gaagtacaag aangtggcca 360
ccaccccatg caggatcggg gtaaggctga tggccccgaa atcgactccg gcctaataca 420
tgactctctc ctttgcgtca tcgccttact tgtgcgcgga a 461

<210> 50
<211> 127
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (24)
<223> a, t, c or g

<220>
<221> modified_base
<222> (118)
<223> a, t, c or g

<220>
<221> modified_base

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<222> (120)
<223> a, t, c or g

<400> 50
gggacacacc tcgatgctgc cgcnatggac gcggtcgaac gcaagcagct gatcgagcta 60
caacgccgcg cggaacgctt ccgccgcggg cgtgacgcat cccgttgacc ggccggancn 120
ctctcta 127

<210> 51
<211> 305
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (24)..(25)
<223> a, t, c or g

<220>
<221> modified_base
<222> (34)
<223> a, t, c or g

<220>
<221> modified_base
<222> (39)
<223> a, t, c or g

<400> 51
tgggcgcctc tttcggcctt cccnntttaa acgnagcang acattctggg tatcgagttg 60
tactggatgg tgttggcgat gtcggtgatc ctgctcctgg cggtgggatc cgactacaat 120
ctgctgctga tttcccgggt gaaagaggaa attggggccg gattgaacac cggaattatc 180
cgtgccatgg ctggtaccgg gggagtgggt acggctgccg gcatgggtgt cgccgttacc 240
atgtcgttgt ttgtgttcag cgatttgca attattggtc agatcggtag caccatcgcc 300
ttccc 305

<210> 52
<211> 449
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (16)
<223> a, t, c or g

<220>
<221> modified_base
<222> (29)
<223> a, t, c or g

<220>
<221> modified_base
<222> (80)
<223> a, t, c or g

<220>
<221> modified_base
<222> (108)
<223> a, t, c or g

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<220>
<221> modified_base
<222> (407)
<223> a, t, c or g

<220>
<221> modified_base
<222> (436)
<223> a, t, c or g

<220>
<221> modified_base
<222> (439)
<223> a, t, c or g

<220>
<221> modified_base
<222> (443)
<223> a, t, c or g

<400> 52
ccgatcggcg ccgcanctgg ttggtgttnc ggatgaatcc gcagcgaaaa tgtagctgcg 60
gtggcggtgtc gtgactcgtn ggcgtcgacg ctcgtggcag ccaccgancg gttgggtccag 120
gatctggatg ggcaaagtgt tgcggcccg ggcgtgacg ccgatgagct gaccgaggtc 180
gacagcgccg tgttggtgta cttggaaccg acatggagtc gccccggttg gcgtcacctc 240
aagcatttca atggttatgc gaccagtttt tgggttacgc cgtcagacat cacgtcggag 300
acttggatga gctgtgtctg ccagatagcc ccgaatcggg acgaccgtgg tcacggtgcg 360
tctgaccact cgggtcgggt cgcccgcgct atcggcatgg gtgctgnatc acagcgacac 420
gcgcctgccc aaggangtnc ggncggacc 449

<210> 53
<211> 160
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (155)
<223> a, t, c or g

<400> 53
cgggttgctg atccacgcgt gcgggtgtgc agcagctacg gcactgaacc gcgcccacag 60
ctcgcgatc cgctttcggg ggttctcgat cgactcgccg taggcgatgc gcagcgctg 120
ctcgaatatc ggttacacgt aggcggccct tcccncitta 160

<210> 54
<211> 308
<212> DNA
<213> Mycobacterium tuberculosis

<400> 54
cttgattttg atcatcatga cgatcatcac cctaattttg ctaccgcac tggttatcgt 60
gggtaccgtc gtgctttcca tgggcgcctc tttcgggctt tccgtattgg tctggcagga 120
cattctgggt atcgatttgt actggatggt gttggcgatg tcggtgatcc tgctcctggc 180
ggtgggatcc gactacaatc tgctgctgat ttcccgggtg aaaaaggaaa ttggggcccg 240
attgaacacc ggaattatcc gtgccatggc tggtaccggg ggagtggtag cggctgccgg 300
catggtgt 308

<210> 55
<211> 460

<212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (239)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (337)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (379)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (391)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (398)
 <223> a, t, c or g

<400> 55
 ggggatccct agatcgacct gcaggcatgc aagcttggcg tgtcgttcca acccgaattg 60
 gctttcggcg ccatcggtga ggcgggacac acctcgatgc tgccgccatg gacgcggtcg 120
 aacgcaagca gctgatcgag ctacaacgcc gcgcggaacg cttccgccgc gggcgtgacc 180
 gcatcccgtt gaccgggagg atcgcggtga tcgtcgatga cggcatcgcc accggagcna 240
 ctgtcaaggc ggcgtgccag gtcgcccggg cgcacggtgc ggacaagggt gtgctggcgg 300
 tcccgatcgg cccagacgac atcgtggcga gattcgncgg gtacgccgat gaggtggtgt 360
 gtttggcgac gccggcgtn gttctcgccg ncgggcangg ttaccgcaac ttcaccacaga 420
 cctccgacga cgaggtggtg gcgtctcctg gatcgtgctc 460

<210> 56
 <211> 299
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (21)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (171)
 <223> a, t, c or g

<400> 56
 aaggctgcag gtcgaagcgg ntgggttacga ctccctgtgt gtgatggacc agttctacta 60
 tctgcgtcta cacggccctt ggtgcgctgg ccacggcgac cgagcggctg caactgggcg 120
 cggtgggtgac cggcaatacc taccgcagcc ccgaccctgc tggcaaagat natcaccacg 180
 ctcgacgtgg ttagcgccgg tcgagcgatc ctcggcattg gagccggcgg gtttgaactg 240
 gaacaccgcc agctcggtt cgagtcgggc acttccagtg accggttcaa ccggctcga 299

<210> 57

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<211> 373
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (106)
<223> a, t, c or g

<220>
<221> modified_base
<222> (305)
<223> a, t, c or g

<220>
<221> modified_base
<222> (339)
<223> a, t, c or g

<220>
<221> modified_base
<222> (373)
<223> a, t, c or g

<400> 57
ctttccgagg taccgcgtca actttgtgtc gaccctcaac gccattgccg gcacctacta 60
cgtgcactcc aactacttca tcctgacgcc ggaacaaaatt gacgcngcgg ttccgctgac 120
caatacgggc ggtcccacga tgacccagta ctacatcatt cgcacggaga acctgccgct 180
gctacagcca ctgcgatcgg tgccgatcgt ggggaaccca ctggcgaacc tggttcaacc 240
aaacttgaag gtgattgtta acctgggcta cggcgacccg gcctatgggt attcgacctc 300
gccgnccaat gttgcgactc cgttcggggt gttccagang tcagcccggg cgtcacgcgc 360
gacgctctcg tcn 373

<210> 58
<211> 338
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (309)
<223> a, t, c or g

<220>
<221> modified_base
<222> (328)
<223> a, t, c or g

<400> 58
cggtcatagc cctcgggtcc ggccagcact ccgcaggctt cgtcgggggtg gtcgcgacgc 60
gcatggggcca ccatcgcatc caccaggctt gcgcgaatca ccagcacgta gacgggttcct 120
ttcctaagca acaccgaagt ttcacgaccc gaatgctccg ggaaacatgt cacggtaggt 180
cggtattccg gctaccggct gagcattgag cacgccggcc agcaccgcac gagccaggca 240
atcagccgcc gccgcaccga tcgcgggtgac cagctgagtc tccggagaca atgcggcccg 300
cacgccggnc tccggcggca ccgctacngc gcccgtgg 338

<210> 59
<211> 374
<212> DNA
<213> Mycobacterium tuberculosis

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<220>
<221> modified_base
<222> (40)
<223> a, t, c or g

<220>
<221> modified_base
<222> (134)
<223> a, t, c or g

<220>
<221> modified_base
<222> (139)
<223> a, t, c or g

<220>
<221> modified_base
<222> (336)
<223> a, t, c or g

<400> 59
gtgatggcac gccaccgcga caccacccgg ctgcgctacn tcgagccata ccgggaggag 60
ctacatcggc tcggccgccc agtggtcggg ccctctttcg aggtcggagt cgataccgat 120
ttgcgcatcc gcanccgcnc cctggacgac agaaccgtgc cctacgagtg cttgtcgggc 180
ggggccaaag aacagcttgg catcctggcg cgattggccg gcgcggcgct ggtcgccaag 240
gacgacgccg ttccgggtgct gatcgacgac gcgctggggg tcaccgatcc ggagcgacta 300
tcaagatggg ggaggtctct gacaccatcg gccccnacgg acatgtgatc gtgccgacgt 360
gcagtcccac cccg 374

<210> 60
<211> 448
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (154)..(155)
<223> a, t, c or g

<220>
<221> modified_base
<222> (322)
<223> a, t, c or g

<220>
<221> modified_base
<222> (334)
<223> a, t, c or g

<220>
<221> modified_base
<222> (347)
<223> a, t, c or g

<400> 60
gcgaaagtcc gttgggtgca atgatgtagc gcttctcccc atcgagatag tggagcaacg 60
caatccgtgc ggtacgggtc gggtcgtact cgatgtgctg gaccttggcg ttgacaccat 120
ctttgtcatt gcggcgaaag tcgatcatcc ggtnnngcgc cttatgaccg ccgcctttgt 180
gccgggtggt aatccggcca tgcgcgttgc gtccaccgcg accgtgcagc gggcgaccca 240
gcgacttctc cgggggttgac cgggtgatct cggcgaaatc agatacgctg gcgcccgcac 300
gaccaggcgt cgtgggcttg tnccttgcgaa ttgncatgtc taatcangtc tttctctcac 360
gctctcgtcg ccgggctagg ccgcattgcc ctgctcctcc tcatcgcttc gctctgcatc 420

gtccccgggc taagcccgtg ccccgaaa

448

<210> 61
 <211> 356
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (349)
 <223> a, t, c or g

<400> 61
 gatggttcgc ggcacgggtca acctgccaca cggcactggt aagactgccc gcgtcgcggg 60
 attcgcgggtt ggtgaaaagg ccgatgctgc cgttgccgcg ggggcggatg ttgtcgggag 120
 tgacgatctg atcgagagga ttcagggcgg ctggctggaa ttcgatgccg cgatcgcgaa 180
 caccggatca gaatggccaa agtcgggtcg atcgctcggg tgctgggtcc gcgcggcctg 240
 atgcccaacc cgaaaaccgg caccgtcacc gccgactccc catggcgtcc cggatatcaa 300
 gggccggcaa atcaacttcc cgttgatca gcaaggcaac ctgcctccnc ctccgg 356

<210> 62
 <211> 336
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (323)
 <223> a, t, c or g

<400> 62
 atactcaagc ttcgtcataa gaccatggtg cgctttcttt caccctcca gagtcggggg 60
 catccgcacc ggctcgcacg gcatcatcct cccacgacgg gccgctcatc agcttggggc 120
 atttcaatgt acttgatacc ccgcgctgcg ggtaggccac tgcgacaatt caaacacggg 180
 gtcacacggt gaatagtgtc gagatggggt ctgatcaacc gtcgcaaacc cggtttcgca 240
 tcaatagcgg aatcccaccg ggttgcatgg aggcgtgctga ccttggaata caaaattttt 300
 tcattacaac aaaacaaccg ccncggaaac tttgca 336

<210> 63
 <211> 489
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 63
 cgaattcggc gtgcaccgct atggggttgca gcagcggctg gcgccgcaca cccactggc 60
 ccgggtggtt tcgccccgaa cccggatcat ggtgagcgaa aaggagattc gcctgttcga 120
 tgctggggatt cgccaccgcg aggccatcga ccgattactc gccaccgggg tgcgagaggt 180
 gccgcagtcg cgctccgctg acgtctccga cgatccatcc ggcttccgcc gtcgggtggc 240
 ggtagccgct gatgaaatcg ctgccggccg ctacctgcaa ggtgattctg tcccgtttgt 300
 tcgaagtgcc tttcgcgatc gactttccgt tgacctaccg gctggggcgt cggcacaaca 360
 ccccggtgag gtcgtttttg ttgcagttgg gcggaatccg tgctctgggt tacagccccg 420
 aactcgtcac ggcgggtgcg gccgacggag ttgttatcac cgatccgttg gccgtaccgc 480
 gccttgggc 489

<210> 64
 <211> 448
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (160)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (377)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (423)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (428)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (448)
 <223> a, t, c or g

<400> 64
 tcagactcca cccagccagc aggcagcgcg aagctgaatc ctccaaccgg gttgtcgatc 60
 cggacaggtt ggggtgcgtt tggggcaatg acaggtggcg gcggtgcgtt cgggtcggcc 120
 ggcggagggtg ctgcgttggg atcgcccggc tgggcattcn gcgtgttggc ggcggccggt 180
 ggtggggggg caacagggtgt cgccggtgcg ggtggcgctg cagcggtcga cggcggcgaa 240
 gcggccgttg tgggtaccgg gggcgctggc tccggatcgg cggtggcggt cgcgggcacc 300
 gcaacgggtca ccaagctggc gctggccatc gccgcgatag ccagtgccgc caatcggtccc 360
 ttgcgacgtg tcaagtnggg gtccacctga tgcattggcca aagaacctac cgtgttaacg 420
 gcncaacnca aggaccgcgc cggtcgcn 448

<210> 65
 <211> 346
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (30)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (63)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (153)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (155)
 <223> a, t, c or g

<220>
 <221> modified_base

<222> (162)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (302)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (313)
 <223> a, t, c or g

<400> 65
 ttccgcggt acccgctcaa ctttgtgtcn accctcaacg ccattgccgg cacctactac 60
 gtncactcca actacttcat cctgacgccg gaacaaattg acgcagcggg tccgctgaac 120
 aattcgggtcc gtcccacgaa agaaccagtt ttncntcttt cncacggaga acctgccgct 180
 gctagagcca ctgcgatcgg tgccgatcgt ggggaaccca ctggcgaacc tgtgtttcaa 240
 ccaacactta gagtgttaatt gtaaaccctg gctaggggaa accggctcta gtttttccac 300
 cntctccgcc ccntgtttcg aatactccgt tcgggttgct cccaaa 346

<210> 66
 <211> 277
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 66
 gcttccggct cgtatgttgt gtggaattgt gaccggatac caatttcaca caggaaacag 60
 ctatgacat gattacgcca agctagttag gtgacactat acaataactca agcttgccgg 120
 ctggtgggccc gaccatttcg atggcacgac ccgtgaactg ctgcccggcc aattcttctt 180
 ggtcgcccgg accgatggac cgcggtcggg attccagaag gtgcccgatc ccgcccctgg 240
 gaaaaaccgc gtgcacctct acttcacgac caacgac 277

<210> 67
 <211> 434
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 67
 ccgatcgact gatgcgccga caaccacgcc ccaacaactg gaatgaaccg tcgtgacat 60
 catcagcacg cggttgtagg cgacttgcca catgttcaac ccgccgtact cggacggaat 120
 cttcaaaccg aaacagccca gctcggccag gcctttcacg tactcgtcgg ggatctgggc 180
 accacgctcg aggacgctgc cgtccacggg gtctaggaat tcccgcagtt tgaccagaaa 240
 cgcctcgggt cgggcctcct cggcgtccga cggcttggga aatgggtgta tgagccctac 300
 gggaaaccgg cccacaaaga gttctttggc gaaggacggg ttatcccaac cactttcgcg 360
 agattcctcg gcaagggccc gcgcttgctc ctcggtgacc tgagtttgct gtgccatcgc 420
 cgcctcctcc ctga 434

<210> 68
 <211> 465
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 68
 tgcattccggc tcgtatgttg tgtggaattg tgagcggata acaatttcac acaggaaaca 60
 gctatgacca tgattacgcc aagctattta ggtgacacta tagaatactc aagcttttac 120
 ggtgatcgcg catcacctgg ttcatgaact ggaagcagcg cagcgcttcc ttttcggccc 180
 caacatgagc cagcctctcg tcggcggtcg ggtgcaggtg ctcgggcagc tcggccgcga 240
 cagccgcctg accctgaaac cagcttccat atcccgcgac gaacgacgcc agtccgctac 300
 gtaacccttc cgcgactgtc catggacaac agcgcgttct ccaccgaccg ggcccgggtg 360

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tgggggtgttt cggcgaccgg cagccaggtg gtccacactg ccgacgggcg ccgagagccg 420
ttcaccgacc aggccgccga gcaagtccgc ccgatcgcat actcc 465

<210> 69
<211> 463
<212> DNA
<213> Mycobacterium tuberculosis

<400> 69
gggggcgctg ctggtatagt cgctgaccgg tgcaggtttc gacaatgtgg tgccgggttcg 60
gcggttacgt gccatcgaga cactggcgca ggctatcgca cccgttatcg gctacgagca 120
aatcgcggtg tgcgttcttg agcatgagtc ggcgaccgtc gtcattggtc acacccacga 180
cggaaagacg cagatcgccg tcaagcatgt gtgccgcgga ttatcaggac tgacctcctg 240
gctgaccggc atgtttggtc gcgatgcctg gcgcccggcc ggcgtgggtc tggtcggctc 300
ggatagcgag gtcagcgaat tctcgtggca gctcgaaagg gtcctgccgg tgccgggtctt 360
tgcgcaaacg atggcgagg ttacggtcgc gcgggggtgc gcctggcggc ggccagagca 420
cgagttcacc gatgcgcagc tagtggcgac agcgtcagcc aac 463

<210> 70
<211> 447
<212> DNA
<213> Mycobacterium tuberculosis

<400> 70
tgcttccggc tcgtatgttg tgtggaattg tgagcggata acaatttcac acaggaaaca 60
gctatgacca tgattacgcc aagctattta ggtgacacta tagaatactc aagcttccgt 120
acaggtcgcc tccaacacgg cggggaagcg acaccagcct accgagcttg gaggccagga 180
cgccagcggc ggctcggtc tgcgtcgtgg tgccgcccgg gtggcggttg ctggcaacga 240
tctccaccca gccggtcggg ttaccacga tctcggcata gacgcgggccc gaggccggtg 300
cgataccgta ttgcgtcaat tgggacgcgg ttgtgcattc ggctagctcg gttgccacac 360
ccgtcagggg ttcgacgttg gcgggttcgg cgggccccag caccgctgtc accatgcccg 420
ccaagccgac ctgcggcgcc accaact 447

<210> 71
<211> 460
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (403)
<223> a, t, c or g

<400> 71
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ccagccgctg aagtcgtcct gcgcgcgcag gccgtcgagc aggtacaggg cgggcgagtt 120
ggcaccacca ctttgggaatt ggaccttgat gtcacggccc atcgacggcg acggcacctg 180
caggtactcc accggcaagc ccggccggga aaatgcccc gcggtcgccc tgccaccgac 240
ggcgccgacc agaccgcaca ctaggggcgc gccgacggcc ccgaccacga gtcgacgcga 300
catacccggt acggcgccac gaaccctgtc aacaagctgc attcttgctt ccctcatcct 360
catctcaacg catccatgca tgtttgggcg catcctgaat tangtcagac tgcaggcgct 420
gggccggcag tgctcgtgta tcaaccacaa cttcgggctg 460

<210> 72
<211> 404
<212> DNA
<213> Mycobacterium tuberculosis

<400> 72

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ttccaaccct	aattggcttt	cggcccatc	cgtgaggacg	gggtgcgggt	gctcaacaac	60
aacgtcgtcc	gcgggacaca	cctctatgct	gccgccatgg	acgcggtcca	acgcaagcag	120
ctgatcgagc	tacaaccccg	cgcggaacgc	ttccgcccgc	ggcgtgaccg	catcccgttg	180
accgggcgga	tcgcggtgat	cgtcgatgac	ggcatcgcca	ccggagcgac	ggccaaggcg	240
gcgtgccacg	tcgcccgggc	gcacgggtgcg	gacaagggtgg	tgctggcggt	cccgatcggc	300
ccaaacgaca	tcgtggcgag	attcgccggg	tacgccgatg	aggtgggtgtg	tctggcgacg	360
ccggcgttgt	tcttcgccct	cgggcagggt	taccgcaact	tcac		404

<210> 73
 <211> 465
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (298)
 <223> a, t, c or g

<400> 73

caggcatgca	agctttccgc	cgatacccg	catgtcgcgc	acatccagga	cttctggggg	60
gatccgctga	cagcggcggg	atcccaaagt	gcggatgac	gggccgccta	cgtcgtggtg	120
tacctcgtcg	gtaacaacga	aaccgaagcg	tatgactcgg	tccacgcggt	gcggcacatg	180
gtggacacca	caccgccacc	gcacgggggtg	aaggcctatg	tcaccgggtcc	ggcagcactc	240
aatgccgacc	aggccgaggc	cggagacaaa	agtatcgcta	aggtcaccgc	cgatcacnag	300
catggtgatc	gcagcaatgt	tgctagtgat	ctatcgctcc	gtaattaccg	cggttctcgt	360
cttgatcatg	gtcggcatcg	actcggccaa	tccgcggatt	catcgccttg	ctcgccgaac	420
acaacatttt	cacctttcac	atttgcacca	acctgctctt	ctcat		465

<210> 74
 <211> 387
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (19)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (76)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (197)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (387)
 <223> a, t, c or g

<400> 74

cactactcaa	gctctctcnt	cattaccacc	cctgtaattt	gggatgggca	aaaaggcgaa	60
gcaccgcttg	gccacnaacg	ccgggaggga	caatctcggg	cggctatggc	ttctcccggg	120
aaggcccaa	cgtacggcgt	ttcaacacgt	cgcgtcgccc	tccgaccgcg	aacattcggg	180
gattggcacc	aacctgntac	caccctggcc	gggcgatgat	ctgcagcgtc	gccgcgggta	240
gtccccgcc	gggcggctac	agtctgaaac	cccgatgacc	atcgatgtgt	ggatgcagca	300
tccgacgcaa	cggttcctac	acggcgggata	tgttctcctc	gctgcgccgg	tggaccgggtg	360
ggtctatccc	ctgaaaccga	catcccn				387

<210> 75
 <211> 445
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 75
 caggcatgca agcttttcgtc agttcattgc gccagcagac caacaagagc atcgggacat 60
 acggagtcaa ctacccggcc aacggtgatt tcttgccgc cgctgacggc gcgaacgacg 120
 ccagcgacca cattcagcag atggccagcg cgtgccgggc cacgagggtg gtgctcggcg 180
 gctactccca ggggtgcggcc gtgatcgaca tcgtcaccgc cgcaccactg cccggcctcg 240
 ggttcacgca gccgttgccg cccgcagcgg acgatcacat cgccgcgatc gccctgttcg 300
 ggaatccctc gggccgcgct ggccgggctga tgagcgccct gacccctcaa ttcgggtcca 360
 agaacatcaa cctctgcaac aacggcgacc catttgttcg gacggcaacc ggtggcaacg 420
 cacctaagct acttgcccgg gatga 445

<210> 76
 <211> 345
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 76
 gtttatgcac tggttaggtg tttccatgag tttcattctg aacatccttt aatcattgct 60
 ttgcggtttt ttattaaatc ttgcaattta ctgcaaagca acaacaaaat cgcaaagtca 120
 tcaaaaaacc gcaaagttgt ttaaaataag agcaacacgt acacaaggag ataagaagag 180
 cacatacctc agtcacttat tatcactagc gcccgcgcga gccgtgtaac cgagcatagc 240
 gagcgaactg gcgaggaagc aaagaagaac tgttctgtca gatagctctt acgctcagcg 300
 caagaagaaa tatccaccgt ggggaaaaac tccaggtaga ggtac 345

<210> 77
 <211> 139
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (37)
 <223> a, t, c or g

<400> 77
 atactcaagc ttgggtgtag ccgatcaccg gaagtcncat gatcagccac gttccgcgcc 60
 gcccggcata cgggtggtgta ccgatctccg cgtcatacac ccgcgggtaa tcgccgacgg 120
 tgccggttcg cgagccgaa 139

<210> 78
 <211> 298
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 78
 agctttatcg aaagcgcgaa cagctcgcgg cggccacga cgtgctgcgt cggattgccg 60
 gcggcgagat caattccagg cagctcccgg acaatgcggc tctgctggcc cgcaacgaag 120
 gactcgaggt caccgccgtg cccgggggtc tgggtgcacct gccgatcgca cagggtggcc 180
 cacaaccggc cgcttgatgc ccggtcggca agcccggcag ttgcaaacc catcgtgatc 240
 aggctcggct cgcgagttcg gcgaagaaat ggttcgctg atcacctacc atcggccca 298

<210> 79
 <211> 300

<212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (58)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (273)
 <223> a, t, c or g

<400> 79
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 ccgctcggtg atggcacgcc accgcgacac caccgggctg cgctacgtcg agccataccg 120
 ggcggagcta catcgccccg gccgcccagt gttcggggcc tctcgcccag gtcgaggctg 180
 acaccgattt gcgcatccgc agccgcaccc tgcgacgaca gaaccgcggc cctacccact 240
 gcttgtcggg cgggggccaa agaaccagct tgnatcctg ccacaattgg ccggcgcccc 300

<210> 80
 <211> 321
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 80
 caggcatgca agcttcacgt ccgtacggct cgggtacgct tcggtcgcag tgtgagagtg 60
 atagatgacg accgggacct cgtcggcatc ttccatagcc cgccacacct tcagttgctc 120
 accggaatcc aaccggtaga aggtcggcca gcgctcggca ttgggtcatcg ggatatgccg 180
 ctcgggacgg tcagagccct cgggtccggc cagcactccg caggcttcgt cgggggtggc 240
 gcgacgcgca tggggcacca tcgcattcac caggctcgcg cgaatcacca gcacgtagac 300
 ggttcctttc ctaagcaaca c 321

<210> 81
 <211> 340
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (29)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (164)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (174)
 <223> a, t, c or g

<400> 81
 aatattcaag ctttcggcgg aaacggacnc cttgcgaaca ttgataacaa aatagaaatc 60
 attgatggtt tgagtcacca ggccgatcaa gccttcgccc agccaaattc caatcaagag 120
 gcccaagccc gtaccaatca gcccggaac gagggattcc gtcnttatca gccnaaataa 180
 ctgctctcgg gtaccacca aacagcgcaa tatggcgaaa aacggtcgcc gttgcacaac 240
 attaaatgtc tcggtattgt tgattaaaaa gatacccacc accagggcaa tccaactgag 300
 agcggttaaa ttgaccgtaa aaacctcccc tcattctgtt 340

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<210> 82
<211> 394
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (379)
<223> a, t, c or g

<400> 82
caggcatgca agcttgctgc atcttcctgt gactgctccc gaaacctggg ggtgtgcctg 60
ctgtgtatgc acggcatacg gacatccttc ccctgatacc cgcggtcgaa ccagccacgt 120
gtccatcatc aggggtcaac cccggccaag ggcgacggca cgccaagttc gccgaccgtt 180
aacctagtgc tgttagcttc atttgctgcg agcaaaacag ctggtcggcc gtttaggaact 240
gaattgaaac tcaaccgatt tgggtgccgc gtaagtgtcc tgtctgcggg tgcgctggtg 300
ttgtccgcgt gtggtaacga cgacaatgtg accgggggag gtgcaaccac tggccaggcg 360
tccgcgaaag tccattgcng ggggaagaag acac 394

<210> 83
<211> 487
<212> DNA
<213> Mycobacterium tuberculosis

<400> 83
gaaagtgcc caaggtgttg gtgaaactcg ctggacggtc cccaggatgt tggcagcaca 60
ttcaccggac atgaccggag caagaccgga catcctcca taccgtcgtc gccgtgtaca 120
tccgtagccc gtcctggcag gtgctgggtt gaacaaaatc agcccaacac ctgccacgac 180
gaagaagcgg gttgcgctgg catgtcttgt cggctcggcg atcgaattct acgaattcct 240
tatctacggg accgctgcgg cgctggtgtt tcccaaccgtg ttcttcccac acctggatcc 300
cacggtggcc gccgtggcct ccaaggggac atttgctgtg gcgttcctat cccggccgtt 360
cggcgcggcc gtctttggat actttggaga ccgcctcggc cgccagaaga ccttggtcgc 420
cacactgttg atcatgggcc tggcaaccgt gactgttggg ctggttccac gacagtggcc 480
atcgcg 487

<210> 84
<211> 418
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (37)
<223> a, t, c or g

<220>
<221> modified_base
<222> (263)
<223> a, t, c or g

<400> 84
atattcaagc tttgtcacac caagtgttcc gaccaancgc tccatccggc gagtggatac 60
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ctgcagcagc cagtccggga aatagctgcc ctggcgagc ttggggatcg cgacgtcgat 180
ggttgcggca cgggtgtcga aatcacgggtg gcggtagccg ttgcgctgat tggaccgctc 240
atcgctgcgt tcgcggtagc ccnccccgca cagggcgctc gcttcagccc ccatccaagg 300
cggcgatgaa cgtcgagagc agcccgcgca gcaaattccg gctcgcctgt gcgagttggt 360
cagccagaag ctgctcggtg tcataagatg agaagaggct agtgcgtcct ttccttcg 418

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<210> 85
<211> 399
<212> DNA
<213> Mycobacterium tuberculosis

<400> 85
caggcatgca agcttttttga gcgctctcgcg gggcagcttc gccggcaatt ctactagcga 60
gaagtctggc ccgatacggg tctgaccgaa gtcgctgcgg tgcagcccac cctcattggc 120
gatggcgccg acgatggcg cctggaccgat cttgtgccgc ttgccgacgg cgacgcggta 180
ggtggtcaag tccggtctac gcttgggcct ttgccgacgg tcccgcacgt ggtcgcgggt 240
gcgcccgaag agcggcgggg cgggtgccat catgaatgcc tcaccgccgc cgcactgcac 300
ggccagtggc ccggcgatgt cagccatcgg gacatcatgc tcgcgttcac actcctcgac 360
cagtcgcggg aacagctcca ttcccggacc gcccacgc 399

<210> 86
<211> 474
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (71)
<223> a, t, c or g

<220>
<221> modified_base
<222> (139)
<223> a, t, c or g

<400> 86
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agcggctggc nccgcacacc ccactggccc ggggtgtttc gccccgaacc cggatcatgg 120
tgagcgaaaa ggagattcnc ctgttcgatg ctgggattcg ccaccgcgag gccatcgacc 180
gattactcgc caccgggggtg cgagaggtgc cgcagtcagg ctccgtcgac gtctccgacg 240
atccatccgg cttccgcccgt cgggtggcgg tagccgtcga tgaaatcgct gccggccgct 300
accacaaggc gattctgtcc cgttgtgtcc aagtgccttt cgcgatcgac tttccgttga 360
ctaaccggct ggggcgtcgg cacaacacc cggtgaggct gttttgttg cagttgggag 420
gaatccgtgc tctgggttac agccccgaac tcgtcacggc ggtgcgccgc cgac 474

<210> 87
<211> 383
<212> DNA
<213> Mycobacterium tuberculosis

<400> 87
caggcatgca agcttcaacc tattgacgca ttgtgcgaac tgacggcgcc cgcgcatggc 60
caatccggaa gaccatcatt ggccagtggc cgggcgctaa caggttccag cccccacca 120
gtgccgctcg aacatgcggg gcaacccatt cgcaggccgg cagggaagc accgcggaag 180
ccgcaaaggg ctgcagttcc gcgccaata gtgtcgtccg caaccagatg cgctcgaaaa 240
ccgccgccgg cagtcagcgc acccgacgcg aggtcgagag acgtcgtcag cgcgccaca 300
tggggtgcca atcggcacgg caggtaggcc gcgcgcaacc ccaacgcgtg gtgcatgcca 360
cggtcgcgag gaggccacca ccc 383

<210> 88
<211> 455
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base

<222> (70)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (249)
 <223> a, t, c or g

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<400> 88
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gatcgacggn cgttggtcgg ggttgactgg ccgcccggcg agcagggcgt caaccgcggc 120
ccggacgtcg gcggccgtca ccggtcggcc attgcccggg cgggagtcgt cgagctgacc 180
acggtagaca agtcggcgct ggccgtcgaa gacaaacgtg tcgggtgtgc aggccgcgga 240
gaaggcgcnh gcgacgtctc gggtttcgtc gtagagatac gggaacgtcc agccgtggcg 300
gcgggcctcg gcgaccatct gatcggggccc gtcctgcggg taggtgacca cgtccttact 360
ggagataccg accatcgga ccctttgatc ggcgagggtcc cggccgaccg tggccaatcc 420
ggcggcgacg tgtcgcccgt accggccagt ggttc 455
```

<210> 89
 <211> 429
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (18)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (21)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (88)
 <223> a, t, c or g

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<400> 89
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tgccatcgag gtgaatgtcg aactggcnca aaccatctgg cgaccgcgac caccggcaac 120
atgggtaccg gcgatttccg gtgccaatgc cgaccgcagc ggccgctctc accgcaggtg 180
acctcgatca ccgagaccag ccggccgtta tactcacgca cccctaccgt gtcacgcccc 240
aaacggcgct ggtggtcgat tgccggagtg caccgccgac ccagtgtcgt gcccggatcc 300
gccgaccaat cccgcaccca cgtcgccaaa cccgaaatca ccgtgatgcc gtggtaactg 360
accaccgaca gtaacgtcac tacggccgcc acgccgacgc cgaaccacca cgcacatgat 420
gatcggctg 429
```

<210> 90
 <211> 321
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (93)..(94)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (96)

<223> a, t, c or g

<400> 90

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ttggtccgcg gaaaccgcag gctggcatat gcacgtgggc gcactggcga tctgcgatcc 180
ccaccgattc gcccgaatac agctttcagc ggctcccca gttgatcatc gaccggctgc 240
cggatatccc gcacttgccg tggcgggcca ccggcgcccc gctcggactg gaccggccgt 300
ggttcgtcga ggaccacgaa c

```

<210> 91

<211> 134

<212> DNA

<213> Mycobacterium tuberculosis

<400> 91

```

caggcatgca agcttcatgc ccgcggcatg atagccacat gcacgcaatc gaactcagcg 60
aaaccggcgg gccaggcgtc ttacgccacc tcaccagcgc gcaacctcaa cccggccacg 120
gagacctcct gatc

```

<210> 92

<211> 513

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (185)

<223> a, t, c or g

<400> 92

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atactcaagc ttgattttga tcatcatgat gatcatcacc cgaattgtgg tagccgcagt 60
ggttatcgtg ggtaccgtcg tgctttccat gggcgccctt ttcgggcttt ccgtattggg 120
ctggcaggac attctgggta tcgagttgta ctggatgggt ttggcgatgt cgggtgatcct 180
gctcntggcg gtgggatccg actacaatct tgccatggct ggtaccgggg gagtggtgac 240
tggggccgga ttgaacaccg gaattatccg ggtaccgggg gagtggtgac 300
ggctgccggc atgggtgttc ccgttaccat gtcgttgttt gtgttcagcg atttgcgaat 360
tattggtcag atcgggtacca ccacgcgcct gggcttgctg ttcgacaccc tcgtcgtgcc 420
tcgttcatga aaccgtccat tgctgcccct ctgggacctg gttctggtgg ccgctacggg 480
tgcgcccgcg cccggcagtc aaatcttccg ccg

```

<210> 93

<211> 345

<212> DNA

<213> Mycobacterium tuberculosis

<400> 93

```

caggcatgca agcttggcgt gccgttccaa cccgaattgg ctttcggcgc catcgggtgag 60
gacggcgtgc ggggtgctcaa cgacgacgtc gtccgcggga cacacctcga tgctgccgcc 120
atggacgcgg tcgaacgcaa gcagctgac gagctacaac gccgcgcgga acgcttccgc 180
cgcgggcgtg accgcatccc gttgaccggg cggatcgcgg tgatcgtcga tgacggcatc 240
gccaccggag cgacggccaa ggcggcgtgc caggctcgccc gggcgcacgg tgcggacaac 300
gtgggtgctg cgggtcccat cggcccagac gacatcgtgg cgaga

```

<210> 94

<211> 302

<212> DNA

<213> Mycobacterium tuberculosis

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<220>
<221> modified_base
<222> (283)
<223> a, t, c or g

<400> 94
atactcaagc ttttacgggtg atcgcgcgcatc acctgggttca tgaactggaa gcagcgcagc 60
gcttcctttt cggccgcaac atgagccagc ctctcgtcgg cggtcgggtg cagggtgctcg 120
ggcagctcgg ccgcgacagc cgcctgaccc tgaaaccagc ttccatatcc cgcgacgaac 180
gacgccagtc cgctacgtaa cccctccgcg actgtccatg gacaacagcg cgttctccac 240
cgaccgggccc cgggtgtggg gtgttttcggc gaccggcagc cangtggtcc acactgccga 300
ag 302

<210> 95
<211> 286
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (28)
<223> a, t, c or g

<220>
<221> modified_base
<222> (189)
<223> a, t, c or g

<220>
<221> modified_base
<222> (191)
<223> a, t, c or g

<400> 95
tagtcgctga ccggtgcagg tttcgacnat gtgggtgccgg ttcggcggct acgtgccatc 60
gagacactgg cgcaggctat cgcacccgtt atcgggtacg agcaaatacg ggtatgctgt 120
cttgagcatg agtcggcgac cgtcgtcatg gtcgacaccc acgacggaaa gacgcagatc 180
gccgtctanc ntgtgtgccg cggattatca ggactgacct cctggctgac cggcatgttt 240
ggtcgcgatg cctggcgccc ggccggcggtg gtcgtgggtcg gctcgg 286

<210> 96
<211> 482
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (400)
<223> a, t, c or g

<220>
<221> modified_base
<222> (476)
<223> a, t, c or g

<400> 96
atactcaagc tttccgccga taccgcccat gtcgcgcaca tccagaactt ctgggggggat 60
ccgctgacag cggcgggatc ccaaagtgcg gatgatcggg ccgcctacgt cgtggtgtac 120
ctcgtcggta acaacgaaac cgaagcgtat gactcgggtcc acgcgggtgcg gcacatggtg 180
gacaccacac cgccaccgca cggggtgaag gcctatgtca ccggtccggc agcactcaat 240
gccgaccagg ccgaggccgg agacaaaagt atcgctaagg tcaccgcgat cacgagcatg 300

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gtgatcgag	caatgttgct	agtgatctat	cgccccgtaa	ttaccgcggt	tctcgtcttg	360
atcatggctg	gcatcgacct	cggcgcaatc	cgcggtatcn	tcgccttgct	cgccgaccac	420
aacattttca	gcctttcaac	atttgcgaca	acctgctcgt	tctcatggcg	attgcngcga	480
ac						482

<210> 97

<211> 395

<212> DNA

<213> Mycobacterium tuberculosis

<400> 97

caggcatgca	agcttggcgt	gccgttccaa	cccgaattgg	ctttcggcgc	catcgggtgag	60
gacggcgtgc	gggtgctcaa	cgacgacgtc	gtccgctgga	cacacctcga	tgctgccgcc	120
atggacgcgg	tcgaacgcaa	gcagctgata	gagctacaac	gccgcgcgga	acgcttccgc	180
cgcgggcggtg	accgcatccc	gttgaccggg	cggatcgcg	tgatcgtcga	tgacggcatc	240
gccaccggag	cgacggccaa	ggcggcgtgc	caggtcgccc	gggcgcacgg	tgcggaacaag	300
gtggtgctgg	cgggtccgat	cggcccagac	gacatcgtgg	cgagattcgc	cgggtacgcc	360
gatgaagtgg	tggtgtttgg	cgaccggcg	ttgtt			395

<210> 98

<211> 439

<212> DNA

<213> Mycobacterium tuberculosis

<400> 98

atactcaagc	tttggcattg	tgcacatttt	ccaccggtgc	tctattaatg	ctgagccgct	60
aattgtgacc	ccagtcggga	aacacgcgga	gcaccaaatt	caccgcagcg	gccggggcg	120
ttcaactcac	catggatcgc	tctcgtcgtc	tggtgctgga	caatcgtcgc	tgtagcgcgt	180
cgcgaacacc	tcagcttctg	ctgccgcggc	ticttccggc	gatggttaacc	cccagggttc	240
gccacgggtc	ttacgtagca	gtgcgacgcg	gtgttcattc	gcatcgacct	gttgactcat	300
cctgtcaagg	atgaaggcgt	actgggccga	ctgcgccttc	tgccgcgcca	ggtcggcaat	360
caccaggatc	tcagaaacga	gctgcgactc	actcttccag	gccaccctgg	ccgaaagctc	420
gacatggtca	atccggccg					439

<210> 99

<211> 348

<212> DNA

<213> Mycobacterium tuberculosis

<400> 99

caggcatgca	agcttgcggg	ccggagtggt	ttcgacggcc	gctcgtttct	cggcatcggt	60
ttgggctgtc	accagcagtt	ggtagttctt	cacgtactgt	tgttcgagcg	tcgagccgcc	120
gcgcgtgtcg	aggctcgccg	acgcgtatcc	cgccaggccg	gtcagggtgc	ccttccagtc	180
cacgccgctg	tggtcggcga	accgcttatc	ttcaatcgag	acgatcgcca	gcttcatcgt	240
gttggcgatc	ttgtccgagg	gcacctcgaa	ccggcgctgc	gagtacagcc	acgcgatcgt	300
gttgcccttc	gcgtcgacca	tcgtcgatac	cgcaggcact	tgccccctc		348

<210> 100

<211> 436

<212> DNA

<213> Mycobacterium tuberculosis

<400> 100

atactcaagc	ttccccggcg	ccagtaccga	aagcgcgaac	agctcgcggc	agcccacgac	60
gtgctgcgtc	ggattgccgg	cggcgaaatc	aattccaggc	agctcccgga	caatgcggct	120
ctgctggccc	gcaacgaagg	actcgaggtc	accccgggtg	ccggggctcg	ggtgcacctg	180
ccgatcgcac	aggttggccc	acaaccggcc	gcttgatgcc	cggtcggcaa	gcccggcagt	240
tgccaaaccc	agcgtgatca	ggctcggctc	gcgagttcgg	cgaagaagtg	gctcgcctga	300
tcacctacca	tcggccagga	tctgcgtgtc	atcacaacgc	tcgccaagga	ggttgtttgtg	360

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gtgctatcga cggccttttag ccagatgttc ggaatcgact atccgatagt gtccgcgcca 420
atggacttga tcgccg 436

<210> 101
<211> 445
<212> DNA
<213> Mycobacterium tuberculosis

<400> 101
agcttcggtg tagccgatca ccggaagccg catgatcagc cacgtttcgc gccgcccggc 60
atacggcggc gtaccgatct ccgcgtcata caccgcggg taatcgccga cggtgccggg 120
tcgcgagccg aaggtgacga cgctgattga atcgagttcc aggtccagcg ggtggcgag 180
caacggcgcg agctcaacga cgtcaatcac gttgtcgctt tctacggta cgcacccggg 240
gaccgtagtc gcccgggtgcg ctccggccgag aagttgcacc gccaccaccg cgacaccgtc 300
ttgcacgcgg acgccacccc cggatcggtt gttggccaag gtaattgggt cattccattt 360
gacgggacgc cgaccccga gccccagtac cgcccacgac cacgcccggc gaccaccac 420
tgtacgaaca ccaaggcgac gccga 445

<210> 102
<211> 261
<212> DNA
<213> Mycobacterium tuberculosis

<400> 102
atactcaagc ttcggtggct tcgcccggcc tgccgggtgg acttcatgac aacgcggggg 60
cgattacccc cgctaccgcc agcagcatga cggcggtacc taacaccgcc cggatgcctc 120
gcacgtgcct cgatgtgctc acggaatcgc cccggcaccg cgatctcgag gatcaccagc 180
gttacccccg gcagcgcgac accgacaatt ccgtacaccg ccacgccgat ccggcccttg 240
gccagctgat tggagctggc g 261

<210> 103
<211> 244
<212> DNA
<213> Mycobacterium tuberculosis

<400> 103
caggcatgca agcttcacga tgtacggatc cacgaacatc ccgttgaact gacaggtgag 60
gcccggctcg atcaggccgg cacttggtt tacgcggtta ccgaagatct cttcggtgac 120
ctgcccggcg ccggccagct cggcccagtg cccggcggtg gccgccgcgg cgacgatctt 180
ggcgtccacg gtggtccggg tcttgcccgc tagcacgatc cgcgagtcgg ccggtcacc 240
gggt 244

<210> 104
<211> 376
<212> DNA
<213> Mycobacterium tuberculosis

<400> 104
atactcaagc tttccaagtc ccaagtgtcg atcatggcca aagagctcga caaagccgta 60
gaggcggttc ggacccggcc gctcgatgcc ggcccgtata ctttcctcgc cgccgacgcc 120
ctgggtgctca aggtgcgcga ggaggccgc gtcgtcgggg tgcacacctt gatcgccacc 180
ggcgtcaacg ccgagggcta ccgaaagatc ctgggcatcc aggtcacctc cgccgaagac 240
ggggccggct ggctggcggt cttccgcgac ctggtcgccc gcggcctgtc cggggtcgcg 300
ctgggtacca gcgacgccc cgccggcctg gtggccgcga tcggggccac cctgcccga 360
gcggcctggc agcgct 376

<210> 105
<211> 284

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<212> DNA

<213> Mycobacterium tuberculosis

<400> 105

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cagggcatgca agcttcacac gtagggcgccg tcgataaatg actccgccgc gcttcgcaca 60
tcctcgtagc gatccttggc gagcaggtca accgggcgct gcccgtcgag gagccggttt 120
ttggcgtgca gccactggcc gacacctcgg ggggtaagcg aatccgagag caggaggacg 180
aggtcacgaa gctgcgccag ccggtcgtac cgctcagggc ggatgtcgcc ggtccgccac 240
ccgcgtaccg cccgatcgga cacctgtatg accgcggcga cgtc 284
```

<210> 106

<211> 140

<212> DNA

<213> Mycobacterium tuberculosis

<400> 106

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cgcgggcggcg cattaccccc gctaccgtca gcagcttgac ggcggtagcg aacaccgccg 60
gatgcagcgc aggtgcgtct atgtgcacac ggaatcgccc cggcaccgcg atctcgagga 120
tcaccagtgc ccgccccctg 140
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<210> 107

<211> 491

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (459)

<223> a, t, c or g

<400> 107

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gggatcgagg aacagcgcgt tgaactgata ggtgcggccc ggctcgagca ggccggccat 60
ttgttcgatg cggttaccga agatctcttc ggtgacctgc ccgccgccgg ccagctcggc 120
ccagtgcgcc gcgttggccg ccgcggcgac gatcttggcg tccacggtgg tcgggggtcat 180
gcccgcgagc aggatcggcg agcggccggt cagccgggtg aacttcgtcg agagcttgac 240
cctgccgtcg gggaggcgaa ccacgggtcg tgcgtatctc gaccaggccc gggcaacctc 300
gggggtggcg ccgacgggtga acaggttgcg ctggccaccg cgggtagccg ccggcactat 360
gccgatgccc aggccgcgga tcaccggtgc ggtcagtcgg gtcaggatgt cggccggccc 420
caggtcgaag atccagcggg cgccggccgc gtggacacng gtgatctcgt ccaccatcga 480
ctttctgatc a 491
```

<210> 108

<211> 364

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (350)

<223> a, t, c or g

<220>

<221> modified_base

<222> (355)

<223> a, t, c or g

<400> 108

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taactcaagg cttgcgttga ggccccaggc ccatcgacgg tttggcggcc ttaaattgcac 60
tgaggctcgtc aattgacccc acagcggaaa tgccgactat tcgcaggcct ctttcgcctt 120
ggctgccgga gaggggctcc gcgggaaccg catgcaggta tatgacctcg gtttctcggg 180
```

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```
tgctaccgcg tgccttgtcg aggatgaact cggcgttggga attgtccagc cggcccaatt 240
catcgagcgc agattcgtac acatggccgg cggcgacata cgcttcaccg tggatctgct 300
ccacacggac cgccctgtcg ggatcctgct cacgggtaaa ggaacttacn tggcnctcgg 360
tgcc 364
```

<210> 109
<211> 453
<212> DNA
<213> Mycobacterium tuberculosis

```
<400> 109
ccttctgcmc caccacacc gtcaacgcc gcgaagtcga cgtcgtccag gccatcggcg 60
gcctcacgga tggattcggc gcggacgtgg tgatcgacgc cgtcggccga ccggaacct 120
accagcaggc cttctacgcc cgcgatctcg ccggaaccgt tgtgctggcg ggtgtgccga 180
cgcccgacat gcgcctggac atgccgctgg tcgacttctt ctctcacggc ggtgcgctga 240
agtcgtcgtg gtacggcgat tgcctgccc aaagcgactt cccacgctg atcgaccttg 300
acctgcatgg ccggctgccg ctgcagcggg tcgtttccga acgcatcggg ctcgaagacg 360
tcgaggaggc gttccacaag atgcatggcg gcaaggattt gcgttcggcg gtgatgttgt 420
gatggccgcc atcgagcgcg tcatcaccca cgg 453
```

<210> 110
<211> 329
<212> DNA
<213> Mycobacterium tuberculosis

```
<400> 110
atactcaagc ttgattttga tcatcatgat gatcatcacc cgaagtgtgg tagccgcagt 60
ggttatcgtg ggtaccgtcg tgctttccat gggcgccctt ttcgggcttt ccgtattggg 120
ctggcaggac attctgggta tcgagttgta ctggatggcg ttggcgatgt cgggtgatcct 180
gctcctggcg gtgggatccg actacaatct gctgctgatt tcccggttga aaaaagaaat 240
tggggccgga ttgaacaccg gaattatccg tgccatggct ggtaccgggg gagtggttac 300
cgctgccggc atggtgttcg ccgttacca 329
```

<210> 111
<211> 438
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (5)
<223> a, t, c or g

```
<400> 111
attgnccttc ggcgccatcg gtgaggacgg cgtgcgggtg ctcaacgacg acgtcgtccg 60
cgggacacac ctcgatgctg ccgccatgga cgcggtcgaa cgcaagcagc tgatcgagct 120
acaacgccgc gcggaacgct tccgccgcgg gcgtgaccgc atcccgttga ccgggcggat 180
cgcggtgatc gtcgatgacg gcatcgccac cggagcgacg gccaaggcgg cgtgccaggg 240
cgcccgggcg cacggtgcgg acaagggtgg gctggcggtc ccgatcggcc cagacgacat 300
cgtggcgaga ttcgccgggt acgccgatga ggtgggtgtg ttggcgacgc cggcgtttgt 360
cttcgccgctc gggcaggggt accgcaactt caccagacc tccgacgaag aagtgggtggc 420
gttttctgga tcgtgctc 438
```

<210> 112
<211> 438
<212> DNA
<213> Mycobacterium tuberculosis

<220>

<221> modified_base
 <222> (367)
 <223> a, t, c or g

<400> 112
 atactcaagc ttttcccgtc cgtcatcgcc caagcgcgtg aggccgaagc ggctgggttac 60
 gactccctgt ttgtgatgga ccacttctac caactgccc a ggttggggac gcccgaccag 120
 ccgatgctgg aggcctacac ggcccttggg gcgctggcca cggcgaccga gcggctgcaa 180
 ctgggcgcggt tggtagaccg caatacctac cgcagcccga ccctgctggc aaagatcatc 240
 accacgctcg acgtgggttag cgccgggtcga gcgatcctcg gcattggagc cggttgggtt 300
 gagctggaac accgccagct cggcttcgag ttcggcactt tcagtgaccg gttcaaccgg 360
 ctcgaanagg cgctacagat cctcgagcca atggtcaagg gtgagcgcca acgtttttcg 420
 gcgattggtta cccaccga 438

<210> 113
 <211> 482
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 113
 cggccaccgg ggccactccg cacaatctgt acccgaccaa gatctacacc atcgaatacg 60
 acggcgctgc cgactttccg cggtacccgc tcaactttgt gtcgaccctc aacgccattg 120
 ccggcaccta ctacgtgcac tccaactact tcactctgac gccggaacaa attgacgcag 180
 cggttccgct gaccaatacg gtcggtccca cgatgaccca gtactacatc attcgcacgg 240
 agaacctgcc gctgctagag ccactgcgat cgggtgccg cgtgggggaa cactggcgca 300
 acctgggtca accaaacttg aagggtgatt ttaacctggg ctacggcgac ccggcctatg 360
 gttattcgac ctcgccgccc aatgttgcca ctccgttcgg gttgttccca gaggtcagcc 420
 cggtcgtcat cgccgacgct ctcgtcgccg ggaccagcag ggaatcggcg atttcgccta 480
 ca 482

<210> 114
 <211> 388
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (172)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (350)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (355)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (369)
 <223> a, t, c or g

<400> 114
 atactcaagc ttgggggtggc gctgtcgggtc ggtgtgcttg gcggcgctcgg tatcaacacc 60
 gcccacgaaa tggggcacaa gaaggattcg ctggagcggg ggtgttccaa aatcaccctc 120
 gccagacct gctacgggca cttctacatc gagcacaacc gtggccatca cntccgggtg 180
 tccacaccgg aggaccggc gtcggcgcggt ttcggcgaaa cgttgtggga gttcctgccc 240
 cgcagtgtta tcggcggtt gcgctcgcc gttcatttgg aggcccaacg gctgcgtcgg 300

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ctcggcggtca gcccttgga tcccatgacg tatctgcgca acgacgtgcn caacncgtgg 360
ctgatgtcng tgggtgttggt ggggtgggc 388

<210> 115
<211> 455
<212> DNA
<213> Mycobacterium tuberculosis

<400> 115
tcgccaccgc accgcggcga acgctcaaag gcacctactg gcaccaaggc cccacacgtc 60
accctgtgac ctcctgccc gaccccgccc gaggtcctgg ccgttaccac cgaacgggag 120
agccgggagt ctggtacgca tcgaacaaag agcaagggtg atgggaggag ttgttccgcc 180
acttcgtcga tgacgggggc gatccattcg aggtccgtcg ccggtcggt cgagtggcgg 240
tcacactcca ggtactcgac ctacacagac agaggactcg atcccatcta ggtgtggacg 300
aaacagatct tctgtccgac gactacacca ccacccaggc catcgccgcc gcccgcgatg 360
ccaacttcga cggcgactg gcccggcgcg cggcgctccc cggttgtcaa acactttgcc 420
gtgttcgttc acgactgccc caacatcgag cccga 455

<210> 116
<211> 328
<212> DNA
<213> Mycobacterium tuberculosis

<400> 116
atgaaataag aagagcacat ccctcagtcg gttatcatca ctagcgctcg ccgcaccggt 60
gtaaccgatc atagcgagcg aactggcgag gaagcaaaga atatctgttc tgtcagatag 120
ctcttacgct cagcgcaaga agaaatatcc cccgcgggaa caactccagg tagaggtaca 180
cacgcggata gccaattcag agtaataaac tgtgacactc acaccctcat caatgatgac 240
gaactacacc ccgatatccg gtcacatgac gaagggaaag agaaggatat catctgtgac 300
aaactgccct caaatttggc ttccttaa 328

<210> 117
<211> 318
<212> DNA
<213> Mycobacterium tuberculosis

<400> 117
atactcaagc ttgtcgaact ctttcttgaa taccggccgg ccatccacag atgcccggaa 60
gaacttccag gtacccatgg cggctggatc agggggcggc acagttggtc ttgtcctgcc 120
tcgagtggcg tcgttgtccg gcttggacgg ggctccgacg gtaccggagg gcagcgacaa 180
aacacttatg cacttggggc acccgccgag acggtgcgac acccatccg acggcacaag 240
ctcagccgag gccgctctt ttcttcgtcg gatcgacatt caccacttc tgaccgggct 300
tgggcgaagg aagcagaa 318

<210> 118
<211> 405
<212> DNA
<213> Mycobacterium tuberculosis

<400> 118
ggtatagtcg ctgaccgggtg caggtttcga caatgtggtg ccggttcggc ggctacgtgc 60
catcgagaca ctggcgagc ctatcgaccc cgttatcggc tacgagcaaa tcgcgggatg 120
cgttcttgag catgagtcgg cgaccgtcgt catggtcgac acccagcag gaaagacgca 180
gatcgccgtc aagcatgtgt gccgcggatt atcaggactg acctcctggc tgaccggcat 240
gtttgggtcg gatgcctggc gcccggccgg cgtggtcgtg gtcggctcgg atagcgaggt 300
cagcgaattc tcgtggcagc tcgaaaggg cctgccggtg ccggtctttg cgaaacgat 360
ggcgcagggt acggtcgcg cgggtgcggc cctggcgggc gccca 405

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<210> 119
<211> 89
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (11)
<223> a, t, c or g

<220>
<221> modified_base
<222> (78)
<223> a, t, c or g

<220>
<221> modified_base
<222> (83)
<223> a, t, c or g

<400> 119
gacactatat natactcaag cttcagggtca atgtgcgcca agccctgacg ctggccgacc 60
aggccaccgc cgccggancc cnttctaga 89

<210> 120
<211> 354
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (110)
<223> a, t, c or g

<220>
<221> modified_base
<222> (238)
<223> a, t, c or g

<220>
<221> modified_base
<222> (242)
<223> a, t, c or g

<400> 120
ctgtagccac ctgttgccat ccccgatcatg cccgactctg gtcattctcg atccgctgac 60
accccgctaa ggctgctcct ctcggtgcat tacctcaccg acggcgaaacn cccccagctt 120
tacgactatc cggatgacgg caccctgggtg ccggctaact tcaccgctcag cttggacggc 180
ggcgctaccg tcgatggcgc cagcggggcg atggccgggc ccggcgaccg attcgtcntc 240
ancctgtcgc gtgaacttgc cgacgtcatc gtggtcgggtg tgggcaccgt gcgcattgag 300
ggctactccg gcgtccggat ggggtgtcgtc aagcgcccgc accggcaggc ccga 354

<210> 121
<211> 379
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (170)
<223> a, t, c or g

53941100

<400> 121
atactcaagc ttgcgacgct cggcgcgcgc ggtaccgccc aggtcgccca acagatcgtc 60
gatgttcgcg tcgtccgcct cgcgcacgtg gtctgtcacc agtcaacgtt aacgccgccg 120
cacatgtcct gcggccgggc aaaaacgtga aaaacgagcg ggcgactgcn atgtcatgac 180
accgacggcc gccgatgggc ccagggtctg gcaaattcga tctgtgcggc cagtgccagc 240
agcgtcgcct cgtcatacgg ccggccgacg agttgaaccg acatgggcag gccgtcgccg 300
tcgaagtccc acggcaccac gggcgcgggc tggccggtca gattccaaaa ttgaaagtac 360
ggaaccgctg caccaccaa 379

<210> 122
<211> 393
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (370)
<223> a, t, c or g

<400> 122
atcgtttcga ccaggcgcct catccggcga gtggatactc ccagcaggta gcaggctgcc 60
accacgctgg tcagtgcgcg ttcagctcgc ttgcggcgct gcagcagcca gtccgggaaa 120
tagctgccct ggcgacgctt ggggatcgcg acgtcgatgg ttgcggcacg ggtgtcgaaa 180
tcacgggtggc ggtagccggt gcgctgattg gaccgctcat cgctgcgttc gcggtagccc 240
gccccgcaca gggcgctcggc ttcagccccc atcaaggcgg cgatgaacgt cgagagcagc 300
ccgcgcagca gatccgggct cgcctgtgcg agttgggtcag ccagaagctg ctcggtgtcg 360
ataagatgan aagaagtcatt tgcgttattt cct 393

<210> 123
<211> 333
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (206)
<223> a, t, c or g

<400> 123
atactcaagc ttgggtgttg ccgatcaccg gaagccgcat gatcagccac gtttcgcgcc 60
gcccggcata cggcggcgta ccgatctccg cgtcatacac ccgcgggtaa tcgcccacgg 120
tgccggttcg cgagccgaag gtgacgacgc tgattgaatc gagttccagg tccagcgggt 180
ggcgcagcaa cggcgcgagc tcaacnacgt caatcacgtt gtcgctttct acggtcaccg 240
acccgggtgac cgtagtcgcc cgggtgcgctc ggccgagaag ttgcaccgcc accaccgcga 300
caacgtcttg cacgcggacg ccaccccccg gat 333

<210> 124
<211> 426
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (5)
<223> a, t, c or g

<220>
<221> modified_base
<222> (424)

<223> a, t, c or g

<400> 124

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gcgcnaacag ctcgcgggcag cccacgacgt gctgcggtcgg attgccggcg gcgagatcaa 60
ttccaggcag ctcccggaaca atgctggctct gctggggccgc aacgaaggac tcgaggtcac 120
cccgggtgccc ggggtcgtgg tgcacctgcc gatcgcacag gttggccac aaccggccgc 180
ttgatgcccc gtcggcaagc ccggcagttg ccaaaccag cgtgatcagg ctccggctcgc 240
gagttcggcg aaaaagtggc tcgcctgac acctaccatc ggccaggatc tgcgtgtcat 300
cacgacgctc gccaaaggagg ttgttggtgg gctatcgacg gcctttagcc agatgttcgg 360
aatcgactat ccgatagtgt ccgcgccaat ggacttgatc gccggcggtg agctggctgc 420
cgcngt
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<210> 125

<211> 336

<212> DNA

<213> Mycobacterium tuberculosis

<400> 125

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atactcaagc tttctccgat acccgccatg tcgcgacat ccaggacttc tggggggatc 60
cgctgacagc ggcgggatcc caaagtgcgg atgatcgggc cgcttacgtc gtgggtgtacc 120
tcgtcggttaa caacgaaacc gaagcgtatg actcgggtcca cgcggtgcgg cacatggtgg 180
acaccacacc gccaccgcac ggggtgaagg cctatgtcac cgggtccggca gcactcaatg 240
ccgaccaggc cgaggccgga aacaaaagta tcgctaagggt caccgcgatc acgaacatgg 300
tgatcgacgc aatgttgcta gtgatctatc gtcctcg
```

<210> 126

<211> 347

<212> DNA

<213> Mycobacterium tuberculosis

<400> 126

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ccatgagcac cgccagccga gcacgaggcc aaactccgcc gacgcaggcc gggttgactt 60
gtcgtgctgg acaaggggtt tagccgccga agcagtgcg tacatcggcg aagagcagtt 120
cgctgtcga ccgacggcgc aaaccgtgag gctagggaag cgaggagcac atggccgccc 180
acccgcaatg tacacgctgc aagcaaacca tcgaacccgg atggctatac atcaccgccc 240
atcgccgcgg tcaagccggg atcgtcgatg acggcgagc actgattcac gtgcccgggtg 300
aatgccgcac cccggggagc actttccgcc aaaactaacc cggttgg
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<210> 127

<211> 315

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (129)

<223> a, t, c or g

<220>

<221> modified_base

<222> (153)

<223> a, t, c or g

<220>

<221> modified_base

<222> (186)

<223> a, t, c or g

<220>

<221> modified_base

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<222> (231)
<223> a, t, c or g

<220>
<221> modified_base
<222> (258)
<223> a, t, c or g

<220>
<221> modified_base
<222> (298)
<223> a, t, c or g

<400> 127
cgggtgtcat tggccaccgg cggcggctgt ccgggaaatg gcgggtcccc ggtgggttttg 60
ctgaggagtg ctgaaccgta gtcgaagtgg gcggcgtcag actccacca gccagcaggc 120
agcgcgaanc tgaatcctcc aaccgggttg tcnatccgga caggttgggg tgcgtttggg 180
gcaatnacag gtggcggcgg tgcgttcggg tcggccggcg gaggtgctgc nttgggatcc 240
ccggctgggc attcggcntg ttggcggcgg ccggtggtgg ggggggcaac acgtgtcncc 300
ggtgcgggtg gccct 315

<210> 128
<211> 354
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (135)
<223> a, t, c or g

<220>
<221> modified_base
<222> (253)
<223> a, t, c or g

<400> 128
ccaagatcta caccatcgaa tacgacggcg tcgccgactt tccgcggtac ccgctcaact 60
ttgtgtcgac cctcaacgcc attgccggca cctactacgt gcactccaac tacttcatcc 120
tgacgccgga acaanttgac gcagcgggtc cgctgaccaa tacggtcggg ccacgatga 180
cccagtacta catcattcgc acggagaacc tgccgctgct agagccactg cgatcgggtg 240
cgatcgtggg ganaccact ggcgaacctg ggttcaacca aacttgaagg tgattgttaa 300
cctgggctac ggcgacccgg cctatggtta ttcgacctcg ccgccc aaat gttg 354

<210> 129
<211> 360
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (55)
<223> a, t, c or g

<220>
<221> modified_base
<222> (224)
<223> a, t, c or g

<400> 129
agcttcccga gttcggcttt ggatcaagac cccagtccgc gggcgcgatc cggcngctcg 60

53941100

gtgactacat	caagccacaa	atcgacggct	ttcgggggtgc	cgataccgat	gacgtggcgg	120
atgtcagagt	ttgagttctc	ggcggggcgg	atgtctacct	ggcgatcacc	tgcctctcgt	180
tgacgatcga	tcgtctatgc	cgccgtctct	gcgggaacag	gccnccagta	catcgccaca	240
gacgggatcc	acccgcattt	cggctacggt	tgctcgtttc	ggtgttcgga	ctagtccgtc	300
ctggtgacgt	gccggtgatg	cggaccggtc	ctagcactga	ccaatggcca	aaatgcgggc	360

<210> 130
 <211> 483
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 130						
cggggggcct	cttaatatgtg	taggaaagaa	gctctacata	ttcaggagga	ttcaccatgg	60
ctcgtgcggt	cgggatcgac	ctcggggacca	ccaactccgt	cgctcgcgtt	ctggaagggt	120
gcgaccgggt	cgctcgtcgc	aactccgagg	gctccaggac	caccccgta	attgtcgcgt	180
tcgcccga	cggtagggtg	ctggtctgcc	agcccgcga	gaaccaggca	gtgaccaacg	240
tcgatcgac	cgctgcgtcg	gtcaagcgac	acatgggcag	cgactgggtc	atagagattg	300
acggcaagaa	atacaccgcg	ccggagatca	gcgcccgc	tctgatgaag	ctgaagcgcg	360
acgccgaggg	ctacctcggt	gaggacatta	ccgacgcggt	tatcacgacg	cccgcctact	420
tcaatgacgc	ccagcgtcag	gccaccaagg	acccggccag	atcgccggtc	tcacgtgctg	480
cgg						483

<210> 131
 <211> 423
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 131						
atactcaagc	ttcataacag	gcctgtttgtg	ggcgcacccg	gctcgccgag	ttctgcacgc	60
accgcctcaa	gtgcggcccgc	caccgccggc	atctcccgtt	cacgcagggc	cgcgggcccgc	120
gccgcagcga	cggcgtgttc	gcgcagttcg	ccgtcaatga	tgctgacctg	atcggccacc	180
cgggcgttct	cggcgtcttc	gcgttacta	atcgcggtgc	tcagcagcgt	ctcgacagcc	240
accacccgag	tggcgaccag	ctgctccacc	acggaccgca	gcgatgccgt	cacctacccc	300
gtccagcgggt	ccaccacgac	acggtcgtgc	accagcgcg	gggcattcac	caccagggcg	360
gtcaccgccca	ggccgatcgc	cacacccgcc	accatccccg	atgcagccag	gccggggagta	420
aga						423

<210> 132
 <211> 338
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (255)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (289)
 <223> a, t, c or g

<400> 132						
ctggtgctgg	acggagccta	gtacaacttc	ctctccaatg	ctcttgcccc	gatcgcgggcg	60
accaggatga	cccaggacat	cctgccgccc	gaagtactgg	aaaagctcac	acccgagttc	120
gtcgcaccgg	tggtagccta	cctgtgcacc	gaggagtgtg	ccgacaaccc	atcgggtgtac	180
gtcgtcagtg	gtggtaggtg	gcagcgagtt	gcgctgtttg	gcaacgacgg	cgccaacttc	240
gacaaaccgc	cgtcngtaca	agatgttgcg	gcgcgggtggg	ccgagatcnc	cgatctgtcc	300
ggtgcgaaaa	ttgctggatt	caagttgtag	aactaaat			338

53941100

<210> 133
<211> 173
<212> DNA
<213> Mycobacterium tuberculosis

<400> 133
atactcaagc ttttccggcg tcgtccacct gacccaaaaa gcgcaggtgc gccgccaac 60
ggcccgctcg gccgcgcaac tggtcggcgt cgccgtggcc gacaatcagt agctggacat 120
ccggaaaccg ctgcaccacc ttcggcagcg cgtcaagcaa aaacggccat tcc 173

<210> 134
<211> 255
<212> DNA
<213> Mycobacterium tuberculosis

<400> 134
tttcagatct catttttatg acatgactgg agatctgtct agattgcagc tcctgtgagc 60
gtgggtaccg gattcaagcc ggtcgggtcac gcccggtggg taccggcttt gcggcagtgc 120
tcggcctcga gttcggcgat cgcgcgcgaa gtgcgtttcg cgaccaaga tcgcggccta 180
atggccggcg atgaccgcga tgaccagcgc gatccaggaa aaaccgttcc aaccagtgtc 240
gggcggccat cccc 255

<210> 135
<211> 285
<212> DNA
<213> Mycobacterium tuberculosis

<400> 135
atactcaagc ttcccgaacca caagttgaac agcaccgatt tcggcgagca cttcgtcaac 60
ttccaggggtg cccgcaccaa gtatttcgac aagtatttcc gtcggggccgc cgccgccggc 120
gcgcggcagg tggatcatct ggccggcgggg ctggactccc gcgcgtaccg gctgccttgg 180
cccgaaggga ccacggtttt tgagctggac cgcccgcagg tccttgattt caagcgcgag 240
gtgctcgcca gccacggtgc ccaaccgcgc gccctgcgcc cgca 285

<210> 136
<211> 494
<212> DNA
<213> Mycobacterium tuberculosis

<400> 136
gtgtgctgtc aattcagagc tgagcctgat gcactcaact tactgagcat gctaacgctg 60
gtcgtgcggg tcttgttccc gcgtgtcggc agggcacacg ctcggggcgt agctgggaga 120
ggccccggtc aagcccggag agcagtgtc agtccgccag cttgaccgac tttcgatgag 180
aacgcgcttc tcgccgtatt gaactggcgt gctgacggtc gctgagcagc gctcggcgag 240
tgcggccgct gattctttca tcgagccagg aggcgcattc gtgttcggcc gcctgcgggt 300
cggcccatc gtcgacgcga tccgtcacc actcctcgat cagggtctgcc tcatcgaacg 360
ggccaacggg gctgtcggag tatgtgtgcg tgggcacggc gagccgggtg ctgtggtaca 420
cccaccgttg catgaccaag ttgacgcctg actggctgag caccgcgata cgctcacagg 480
tcggaacgtt ggtg 494

<210> 137
<211> 357
<212> DNA
<213> Mycobacterium tuberculosis

<400> 137
atactcaagc ttttggctta gccggccgag cccgatacag gtgtcattgg ccaccggcgg 60
cggctgtccg ggaaatggcg ggtccccggt ggttttgctg aggagtgtg aaccgtatgc 120

53941100

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gaagtgggcg gcgtcagact ccacccagcc agcaggcagc gcgaaactga atcctccaac 180
cgggttggtcg atccggacag gttgggggtgc gtttggggca atgacaggtg gcggcggtgc 240
gtccgggtcg gccggcgga gttgctgcgtt gggatcgccc ggctgggcat tctgcgtgtt 300
ggcggcggcc ggtggtgggg gggcaacagg tgtctccggt gcgggtggcg ctgcacc 357
```

<210> 138
<211> 458
<212> DNA
<213> Mycobacterium tuberculosis

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<400> 138
ggggccactc cgcacaatct gtacccgacc aagatctaca ccatcgaata cgacggcgtc 60
gccgactttc cgcggtaccc gctcaacttt gtgtcgaccc tcaacgccat tgccggcacc 120
tactacgtgc actccaacta cttcatcctg acgccggaac aaattgacgc agcggttccg 180
ctgaccaata cggtcggtcc cacgatgacc cagtactaca tcattcgac ggagAACctg 240
ccgctgctag agccactgcg atcggtgccg atcgtgggga acccactggc gaacctgggt 300
caaccaaact tgaagggtgat tgtaacctg ggctacggcg acccggccta tggttattcg 360
acctcgccgc ccaatgttgc gactccgttc gggttgttcc cagaggtcag cccggtcgtc 420
atcgccgacg ctctcgtcgc cgggacccag cacggaat 458
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<210> 139
<211> 595
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (5)
<223> a, t, c or g

<220>
<221> modified_base
<222> (13)..(14)
<223> a, t, c or g

<220>
<221> modified_base
<222> (21)..(23)
<223> a, t, c or g

<220>
<221> modified_base
<222> (28)
<223> a, t, c or g

<220>
<221> modified_base
<222> (36)
<223> a, t, c or g

<220>
<221> modified_base
<222> (42)
<223> a, t, c or g

<220>
<221> modified_base
<222> (57)
<223> a, t, c or g

<220>

<221> modified_base
<222> (72)
<223> a, t, c or g

<220>
<221> modified_base
<222> (76)
<223> a, t, c or g

<220>
<221> modified_base
<222> (218)
<223> a, t, c or g

<220>
<221> modified_base
<222> (301)
<223> a, t, c or g

<220>
<221> modified_base
<222> (328)
<223> a, t, c or g

<220>
<221> modified_base
<222> (337)
<223> a, t, c or g

<220>
<221> modified_base
<222> (405)
<223> a, t, c or g

<220>
<221> modified_base
<222> (408)
<223> a, t, c or g

<220>
<221> modified_base
<222> (413)
<223> a, t, c or g

<220>
<221> modified_base
<222> (468)
<223> a, t, c or g

<220>
<221> modified_base
<222> (483)
<223> a, t, c or g

<220>
<221> modified_base
<222> (491)
<223> a, t, c or g

<220>
<221> modified_base
<222> (493)
<223> a, t, c or g

<220>
 <221> modified_base
 <222> (498)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (525)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (533)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (539)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (546)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (573)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (577)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (580)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (589)
 <223> a, t, c or g

<400> 139
 ttctntcttc ccnnattcgt nnntctcnta ctaccnngggc cncaaaacac cttggcnaac 60
 gctcaaaggc gntacnngca ccaaggcccc acacgtcacc ctgtgacctc ctgcgccgac 120
 cccgccccgag gtcctggccg ttaccactga acgggcgagc cgggagtctg gtacgcatcg 180
 aacaaagagc aagggtgcatg ggcggagttg ttccgccnct tttttatga cgggggtcgat 240
 ccattcgagg tccgtcgccg cgtcgggtcga gtggcggtca cactccaggt actcgacctc 300
 ncagacgaga ggactcgatc ccattctangt gtggacnaaa cagatcttct gtccgacgac 360
 tacacaccac ccaggccatc gccgccgccc gcgatgccaa cttcnacncc gtncctggccc 420
 cggcggcggc gctccccggt tgtcaaacac ctgccgtgtt cgttcacnca ctgccccaca 480
 tcnagccccga ncnatccnag gtccgtccaa cgcctccgcg gctcnccaac ctntcccnc 540
 tgatcntccg caccaaacac atgcccgact ccntgcncn attgcttgna tccct 595

<210> 140
 <211> 434
 <212> DNA
 <213> Mycobacterium tuberculosis

53941100

<400> 140
ccgctatcgg tcggtgtgct tggcggcgct ggtatcaaca ccgcccacga aatggggcac 60
aagaaggatt cgctggagcg gtggctgtcc aagatcacc tcgcccagac ctgctacggg 120
cacttctaca tcgagcacia ccgtggccat cacgtccggg tgtccacacc ggaggacccg 180
gcgtcggcgc ggttcggcga gacgttgttg gagttcctgc cccgcagtgt tatcggcggc 240
ttgcgctcgg ccgttcattt ggaggcccaa cggctgcgtc ggctcggcgt cagccccctg 300
aatcccatga cgtatctgcg caacgacgtg ctcaacgcgt ggctgatgtc ggtggtgttg 360
tgggggtgggc tgatcgcggt cttcggcccc gcgctgatcc cgttcgtcat catccaggca 420
gtcttcggct tcag 434

<210> 141
<211> 321
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (42)
<223> a, t, c or g

<400> 141
atactcatgc ttgccgaagt tccgatgggt cgcgccggcg ancccagcga agtcgctagc 60
gtggccgtgt tcttggttcc ggatctatcc tcgtacatga ccggcaccgt gttggacgtg 120
actggcgggc gggtcatatg acaccgagat cattgccacg gtacggcaat tcgtcaagaa 180
ggaaatcttt cccaatgcac cggccctcga acgtggcaac agctaccgcg aagaaatcgt 240
cgatcggtcg ggtgttattg gcttgctcgg tcgccggctg caaggggtatc gacaccaccg 300
agttcattct ccgggcgtgc c 321

<210> 142
<211> 348
<212> DNA
<213> Mycobacterium tuberculosis

<400> 142
ggcgtcaacg gtgtcggcac cggcgtcctg cagttggtag gcctgcagtt tgtgcatcag 60
gccgatgccg cggccctcgt ggccacgcat gtacagcacc acgccgcgcc cctcacgggc 120
gaccatcgcc agcgcggcgt ccagctgagg cccgcaatcg cagcggcgtg acccaaacac 180
atcgccgggtc aagcactccg aatgcacccg gaccagcacg tcgtcaccgt cggcgttggg 240
cccggcgatc tcgccgcgga ccagcgcgac atgttccacg tcctcgtaga tgctggtgta 300
gccgatggcg cgaatctccc atgacgagtc ggaatccgcg cctcggcg 348

<210> 143
<211> 339
<212> DNA
<213> Mycobacterium tuberculosis

<400> 143
atactcaagc ttcggcctcg ctgcaggagt gggagccgca gggctggaaa tccgaaaaac 60
gagccgggtga tcgcaactgt gccgatcggg gccgcacctg gttggtgta ccgatgaatc 120
cgcacccaaa atgtggctgc ggtggcggtt cttgactcct tggcgtcgac tcttgtggca 180
gccaccgagc ggttgggtcca ggatctggat gggcaaagt gtgcggcccg gccggtgacg 240
gccgatgagc tgaccgaggt cgacagcgcc gtgttggctg acttgaacc gacatggatt 300
cgccccgggt ggcgtcacct caagcatttc aatggttat 339

<210> 144
<211> 269
<212> DNA
<213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (264)
 <223> a, t, c or g

<400> 144
 atgctgcacc cccgatgcgc cagatcgggg cttcgcgaat aaagcacgaa caggcgggca 60
 aaacgtctat ctcggagccg gaagggaat cagccgaccg tcgacgaacg acaccggcga 120
 taaccactta ggcgttgaac ggccggccca aacattacgc ctccgttgat aaggctttcg 180
 gtctcttccc cggtcattcc aagcaccttg cggcaaatit gaacgctttc ctgtccgggc 240
 accggccccg ggctttgggg tccntccga 269

<210> 145
 <211> 285
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (187)
 <223> a, t, c or g

<400> 145
 atactcaagc ttcaatcgcg ccgccacaat ccaaatatgc gtctagcgct tcgatgagcg 60
 tcggtccggc atcggctagg ggccgcatca cgtcggtagt cagggccacg atcgcccaag 120
 gcgtcgccca tcaagggcgc gttcgggcaa aaattcccct atccagcacg ggccgcggcg 180
 ctccgcncca gccggcgacg gcgttcattc cggagatcgc ctccgtagcg ctgcggtgag 240
 ccgcgggtcag catgggcgcc gtggggccga tgaccaccgg ggcgt 285

<210> 146
 <211> 75
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 146
 ttccggcgggt ctgtagattg cggtcggcca cccacaggc actcatgaac cgcagccac 60
 gatcgatctc ggtgg 75

<210> 147
 <211> 164
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 147
 gcgcaccatc gccagtaggt gcccgtagtc gggcgcgctc agccacccga gcggaaacgc 60
 gagtccgaac agcaacagca ggacggggcg aaccagggcg gtgaccatgc ccccgggcgt 120
 gaacatcaac cacaggaagg gctccgccga gcgtccgcgc gacc 164

<210> 148
 <211> 228
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (26)
 <223> a, t, c or g

53941100

<220>
<221> modified_base
<222> (30)
<223> a, t, c or g

<400> 148
catcgtcgaa cttcgggtccg gggtgntagn accgcagcac caaacgcacc caccgacccc 60
cacgcttcac gccaacccctt tagttcattg gcgtgaacag cagcgtagcc ggttgccccg 120
atatatgtgg aaaaatcggt cggacgtaca aaaaaagttc ctgacgctgg cgtcaactcg 180
aaactgcctc ggaagtcaat gatgatccat cagtcaatat taaagtcg 228

<210> 149
<211> 238
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (230)
<223> a, t, c or g

<400> 149
atactcaagc ttgtctgctg cctcagcgta tgcattcaac agcgcattcg gatcaacgat 60
caggcgcgcc gatttcgggc cgcgggcagt ggcaactggc agatggccgt ttttttcgag 120
aaacttcaac gcctgagcgc tgcttcccat cgagagaccg gtggcctcta caaccgatgc 180
gacagttgga ccggcgatgt tcgccagcag cgcttcacat acggcaagtn tggcgcg 238

<210> 150
<211> 162
<212> DNA
<213> Mycobacterium tuberculosis

<400> 150
ttgtccaggc ggggaatcgg gcaggagac gacaccttcg ttcggttcga tcgtcgcgaa 60
cgggtagttg gccgcgacca cgttggttcg ggtagcgcg ttgaaaagtg tcgacttgcc 120
gacgttgggc aggccacga tccccaggct caagctcaca ga 162

<210> 151
<211> 377
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (185)
<223> a, t, c or g

<220>
<221> modified_base
<222> (190)
<223> a, t, c or g

<220>
<221> modified_base
<222> (192)
<223> a, t, c or g

<220>
<221> modified_base
<222> (314)

<223> a, t, c or g

<400> 151

atactcatgc	ttggcgctg	ggtggcagcc	cacctgccc	ccacacggac	cgcggtgcgg	60
acgcggtga	cgcgctggt	ggtcagcatc	gtggccggtc	tgctgttgta	tgccaacttc	120
ccgccgcga	actgctggtg	ggcggcggtg	gttgcgctcg	cattgctggc	ctgggtgctg	180
acccnccgn	cnacaacacc	ggtgggtggg	ctgggctacg	gcctgctatt	cggcctggtg	240
ttctacgtct	cgttgttgcc	gtggatcggc	gagctggtgg	gccccgggcc	ctggttgga	300
ctggcgacga	cgtnccgct	gttccccggc	atcttcggtc	tgttcgccgt	cggtgtaccc	360
tgttgccggg	ttggccc					377

<210> 152

<211> 308

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (264)

<223> a, t, c or g

<220>

<221> modified_base

<222> (280)

<223> a, t, c or g

<400> 152

cgccaattca	cgatatcgtt	aaccgatatc	ccgagccgat	agctggcggg	ctcgggtggt	60
ggccagcggc	gctgcgacga	aagggtgtgac	cgatcatgaaa	cagacaccac	cggcggccgt	120
cgccgctcgt	cacctgctcg	agatctcagc	atccgcagcc	ggtgtgatcg	cgctttcggc	180
gtgtagtggg	tcgcccggcg	accccgga	aggccggccc	gacacaaccc	cggaacagga	240
agtcccggtc	accgcgcccg	aagnacttga	tgcgcgaaen	cgagtgctc	caaacgcac	300
ctgctgat						308

<210> 153

<211> 377

<212> DNA

<213> Mycobacterium tuberculosis

<400> 153

atactcaagc	ttgggcaactg	acttcggtac	cccctccgcc	tttggccagc	agcagccaca	60
gcgcggttcg	cggaccgaac	gtggacatca	atagcccggg	atcggtgtgt	gcaagttggt	120
aaacggtggt	gatcccaagc	tttgccagcc	ttttcgtagt	cttgggcccc	acacccaca	180
gtgcttcgac	ggtacggtca	cccatgatgg	ccatccagtt	ggcatcggtg	agctgataaa	240
tgccagctgg	tttcgccaac	ccggtagcga	tcttggcgcg	ctgcttggtg	tcactgatac	300
ctatcgagca	agacagcccg	gtttgcgaca	aaatgacttt	tcggatctct	tcggcgactt	360
cgatggggtc	gtcggga					377

<210> 154

<211> 259

<212> DNA

<213> Mycobacterium tuberculosis

<400> 154

aaagtcttgt	gccggttcgc	taaacacccg	gcggacactc	agacggtgct	ggtggtgcgg	60
catggcaccg	cgggcagcaa	agcgacttc	tccgggggac	gacagcaagc	gaccgctaga	120
caagaggggt	cgtgcgcagg	cagaaacgtt	ggtacacagc	tgctggcggt	cggcgccacc	180
gatgtttatg	ccgccgaccg	ggtgcgctgc	caccagacga	tgagagccact	cgccgcggaa	240
ctgaacgtga	ccatacaca					259

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<210> 155
<211> 372
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (339)
<223> a, t, c or g

<220>
<221> modified_base
<222> (366)
<223> a, t, c or g

<400> 155
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cctgccgatc cgaaatggaa tcggccgtga cggaattggc gcaccgaaca cccaacgagg 120
tggtggcttc gtcgcgaacc gtcacccgag tcgcggccac cgtgcgcacg gcgacgttct 180
acacccgcac caagatccga aagctgcaag ctcccagcac cgatcccgcac gtcacacccg 240
ctgccgcccc gcacgtcctt gacctattcg agctggatcg gcccgctccg ttgctggggag 300
tgcggttaga actggcctag aaccggcggg cacaccgcnc ctgggcgggg cgaattcctg 360
accgncggg cc 372

<210> 156
<211> 290
<212> DNA
<213> Mycobacterium tuberculosis

<400> 156
cgcggttggc gtagttggac gggtcgccct ccgaggccaa tgatgacgat gaccacgccg 60
atcacgatgg ccaccgagag ggacaacaac agaaagctga cgaatccctc cttggcggcc 120
ggggctttgt ggtcgccggt cgcatggggc gcgaatttac ggcccgtctc cccaggccgc 180
cgcaagcag ggtccccagc cagttggcgt aggcggaatt aacgatcagc gccaccgcga 240
taacctgcca tgctcgggc atatcgatgt gcggccagaa caggccgaac 290

<210> 157
<211> 470
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (331)
<223> a, t, c or g

<220>
<221> modified_base
<222> (362)
<223> a, t, c or g

<400> 157
ccaacaagag catcggggaca tacggagtca actaccggc caacggtgat ttcttggccg 60
ccgctgacgg cgcaacgac gccagcgacc acattcagca gatggccagc gcgtgccggg 120
ccacgagggt ggtgctcggc ggctactccc agggcgccgc cgtgatcgac atcgtcaccg 180
ccgcaccact gcccgccctc gggttcacgc agccgttgcc gcccgcagcg gacgatcaca 240
tcgccgcgat cgccctgttc ggggaatccct cgggcccgcg tggcgggctg atgagcgccc 300
tgacccctca attcgggtcc aagaccatca ncctctgcaa caacggcgac ccgatttgtt 360
cngacggcaa ccggtggcga gcgcacctag gctacgtgcc cgggatgacc aaccaggcgg 420
cgcggttcgt cgcgagcagg atctaaccgc gagccgcccc tagattccc 470

<210> 158
 <211> 434
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (4)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (134)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (178)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (355)
 <223> a, t, c or g

<400> 158
 taanaccgt gtaatttggg atgggcaaaa aggccaagca ccgctgggcc acgaacgccg 60
 ggagggacaa tctcgggagg ctaggggcttc tcgcggggaag gcccgaacgt acggcggttc 120
 aacacgtcgc gtcnccctcc gaccgcgaac attcggggat ggtagcacc tggtagcncc 180
 ctggccgggc gatgatctgc agcgtcgccg cgggtagtcg ccgcccgggc ggctacagtc 240
 tgaaaacgcga tgaccatcga tgtgtggatg cagcatccga cgcaacggtt cctacacggc 300
 gatatgttcg cctcgtctgc ccggtggacc ggtgggtcta tcccggagac cgacntcccg 360
 atcgaagcga ccgtctcctc gatggacgcc ggcggcgtca ccctggggtt gctcaccgcc 420
 tggcgtggcc ccaa 434

<210> 159
 <211> 363
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (363)
 <223> a, t, c or g

<400> 159
 gtccgcaaaa gactcagcgg ccgactttgc tcgcagctgg cggtagccgc ccaccgattc 60
 gatgccgtgg tcgcgggaaga atgcctcccg aaatcgacgc gccgactcca gttcgggcgag 120
 catccgcgat gccagctgcg gctgcgccct gccggccacg gcacccacat gcggcagttc 180
 gtccacctgg gccagcggcc cgccggccgaa gtccaaacaa tagaactgca cccggccccg 240
 atcgtgggta gcagccaacg ccatgatcag cgtccgcagc gcggttgact tgcccgtttg 300
 cgggtgcacct acgaccgcga cattgcctgc ggccccggac aagtcgatcg tcagcggcac 360
 ccn 363

<210> 160
 <211> 301
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (27)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (267)
 <223> a, t, c or g

<400> 160
 cgtggccacg aacgccggga gggacantct cgggaggcta gggcttctcg cgggaaggcc 60
 cgaacgtacg gcgtttcaac acgtcgcgtc gccctccgac cgcgaacatt cggggatggc 120
 agcaacctgg cagctacctg gccgggagat gatctgcagc gtcgccgcgg gtagtcgccg 180
 cccgggagcg tacagtctga aacgcgatga ccatcgatgt gtggatgcat catccgacgc 240
 aacggttcct acacggcgat atgttcncct cgctgcgcgc gtggaccggt gggcttatcc 300
 c 301

<210> 161
 <211> 436
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (334)
 <223> a, t, c or g

<400> 161
 atactcaagc tttgcggcgg gcgccgaaat gtgaacgcac caaaccgcgc cgctgcgggt 60
 cggcgggcca ctcgacctcg aatttcgccc ccgtgacctt ccagcccgcg ggcagttggg 120
 caccggcccc cccggctcgc gcataactgt tggcgtcgcc gtcataaagc tcgaacagca 180
 ccgaaaccga ctccaccacc ggccggtgcg cctcaaaaac cagcgcgac tccacatacc 240
 gggaaaacgt cgggtgtccc tccgggtttc gcttgcccgc cagctgcaca ccaccggtgg 300
 cctcggccac cttcgcggcc tgagcgcagc tacncatcct gacgatcatc accccgcccc 360
 cggctcacgc ttggcctccg tgaccgcacg catcgcccgc ttgcgcgcac cgcgacgccc 420
 gtacagccgc gcgcac 436

<210> 162
 <211> 390
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (333)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (363)
 <223> a, t, c or g

<400> 162
 agcttgccgg gactgcggaa cagaagcggc gggttcctacc gcggtgtgcg gccggcgcca 60
 tatcgccctt ttactaacc gaaccgatg tgggctccga tccggcgcg atggcatcga 120
 cggcgacgcc gatcgatgac ggccaggctt acgagcttga ggggtgtgaag ttgtggacca 180
 ccaacgggtg ggtagcggac ctgctagtgg ttatggcgcg ggtaccgcgc agtgaagggc 240
 accgaggggg aatcagcgcc ttgtcgtcgc aggcctgatt gcccgggatc accgtggagc 300
 ggcgcaacaa gttcatggga ctgcgtggca tcnaaacggt cgtgaccggt cttcatcgcg 360
 tcnggggtgcc caaagacaac ttgatcggca 390

<210> 163
 <211> 75
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 163
 ctcaagcttg gcgatgcggg ctggccaaaa ctggccgggc gggggttggc ttgttcaatc 60
 aagggtgggt tgccg 75

<210> 164
 <211> 110
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 164
 ccgaaggccc gttcccgggc gttcagcaag cgatcgctcg ttggcccact gcgggtcgaa 60
 tcttgcgggc gcgccggtcg tggaaacgccc aggtcaccgc gcggcggtacc 110

<210> 165
 <211> 455
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 165
 atactcaagc ttttttctgc tcatgaagggt tagatgcctg ctgcttaagt aattcctctt 60
 tatctgtaaa ggctttttga agtgcacac ctgaccgggc aaatagttca ccggggtgag 120
 aaaaaagagc aacaactgat ttaggcaatt tggcgggtgt gatacagcgg gtaataatct 180
 tacgtgaaat attttccgca tcagccagcg cagaaatatt tccagcaaat tcattctgca 240
 atcgggcttg ataacgctga ccacgttcat aagcacttgt tgggcgataa tcgttaccga 300
 atctggataa tgcagccatc tgctcatcat ccagctcgcc aaccagaaca cgataatcac 360
 tttcggtaag tgcagcagct ttacgacggc gactcccatc ggcaatttct atgacaccag 420
 atactcttcg accgaacgcc ggtgtctgtt gacca 455

<210> 166
 <211> 309
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 166
 ctcaagcttg gtgccgacat ggccgggctg gagccgcgt atggcaagggt tccgctcaat 60
 gtggttgtga tgcagcagga ctacgttcgc ctcaatcagc tcaaacgtca cccccgtggc 120
 gtgctgcgca gcatgaagggt cggcgcccg acgatgtggg cgaaggcaac aggtaaaaac 180
 ctggtcggca tgggtcgagc cctcattggg ccgttgcgga tcgggttgca ccgcgcggga 240
 gtgccggtcg aactcaacac cgccttcacc gatcttttcg tcaaaaatgg cgtcgtgtcc 300
 ggggtatac 309

<210> 167
 <211> 232
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 167
 ccgaagcgtg ggaaatcctg accgaatacc gcgacgtgct ggacactttg gccggcgagc 60
 tgctggaaaa ggagaccctg caccgacccg agctggaaag catcttcgct gacgtctaaa 120
 agcggccgcg gctcaccatg ttcgacgact tcgggtggccg gatcccgtcg gacaaaccgc 180
 ccatcaagac acccggggga gatcgcgatc gaaacgcggc gaaacttggg cc 232

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<210> 168
<211> 455
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (426)
<223> a, t, c or g

<400> 168
cgactcgaca agcatttcttg acagttgttt tggctcggca tggtttagcca aggttctgcg 60
gtcccaccag atcatcttgg tccggtagcg ctcgctccgg tatgctgccg ccgggattct 120
cgctgctatt actcccccg aaaaacgcca ccggtccagc gcgtgggccc ccgcgggtccc 180
catcacaac tgaaccccc acaggggaca tgcttagcgg tagggcgcg gccaaggcgg 240
cagcaatcgc atcactgcg tgcgcgtcac tattaaccca cccggacttc acttccacga 300
ccccgaatgg cgcccggtca ttgatcatct tgcgcaccgc ggataatccg ggattgccag 360
cccattcgac taccgcatgc gagtcacgg ctgaccgcag cggtcggatt acccgagcgc 420
cccgantaca tctcctccaa tatcaatggg cgcaa 455

<210> 169
<211> 428
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (6)
<223> a, t, c or g

<400> 169
gcggtntagc ttcccgtcgt accggcgacc gccagccgag aagctcgttt tcccagtgtt 60
gctggggatt ctcacgctgc tgctgagtgc gtgccagacc gcttccgctt cgggttacaa 120
cgagccgcgg ggctacgatc gtgcgacgct gaagtgtgtg ttctccatgg acttggggat 180
gtgacctgaac cgggtcacct acgactccaa gctggcgccg tctcgtccgc aggtcgttgc 240
ttgctgtagc cgggaggccc ggatccgcaa tgacggattc catgccaaacg ctccgagttg 300
catgcggatc gactacgaat tgatcaccca gaaccatcgg gcgtattact gcctgaagta 360
cctggtgctg gtcggatact gctatccggc ggtgacgacc cccggcaagc cgccatccgt 420
gctgctgt 428

<210> 170
<211> 385
<212> DNA
<213> Mycobacterium tuberculosis

<400> 170
ctcaagcttg ggcgtagcgg ccaccggggc cactccgcac aatctgtacc cgaccaagat 60
ctacaccatc gaatacgacg gcgtcgccga ctttccgcgg taccgctca actttgtgtc 120
gaccctcaac gccattgccg gcacctacta cgtgcactcc aactacttca tcctgacgcc 180
ggaacaaatt gacgcagcgg ttccgctgac caatacggtc ggtccacga tgaccagta 240
ctacatcatt cgcacggaga acctgccgct gctaaagcca ctgcgacgg tgccgatcgt 300
ggggaaccca ctggcgaacc tggttcaacc aaacttgaag gtgattgtta acctgggcta 360
cggcgacccg gcctatgggt attcc 385

<210> 171
<211> 318
<212> DNA
<213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (292)
 <223> a, t, c or g

<400> 171
 cgggtgtcat tggccaccgg cggcggctgt ccgggaaatg gcgggtcccc ggtggttttg 60
 ctgaggagtg ctgaaccgta gtcgaagtgg gcggcgtagc actccaccca gccagcaggc 120
 agcgcgaagc tgaatcctcc aaccgggttg tcgatccgga caggttgggg tgcgtttggg 180
 gcaatgacag gtggcggcgg tgcgttcggg tcggccggcg gaggtgctgc gttgggatcg 240
 cccggctggg cattcggcgt gttggcggcg gccgggtggtg ggggggcaac angtgtcgcc 300
 ggtgcgggtg gcgctgca 318

<210> 172
 <211> 443
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (1)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (437)
 <223> a, t, c or g

<400> 172
 ncttgatatt ggcgtcaacg gtgtcggcac cggcgctctg cagttggtag gcctgcagtt 60
 tgtgcatcag gccgatgccg cggccctcgt ggccacgcat gtacagcacc acgccgcgcc 120
 cctcacgggc gaccatcgcc agcgcggcgt ccagctgagg cccgcaatcg cagcggcggtg 180
 acccaaacac atcgccggtc aagcactccg aatgcacccg gaccagcacg tcgtcaccgt 240
 cggcgttggg cccggcgatc tcgcccggga ccagcgcgac atgttccacg tcctcgtaga 300
 tgctggtgta gccgatggcg cgaaactccc catgacgagt cggaatccgc gcctcggcga 360
 cccgctcaat gtgcttctcg tgcttgccgc gccattcgat caagtcagca atggtgatca 420
 gcgccagacc gtgctcntcg gcg 443

<210> 173
 <211> 420
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 173
 cataagggcc ggcgtacccg gtaccggccg cgggcctacc acgtgccgga actggaagcg 60
 cagtaagccc tcaacgcgcc accgctttgg cccgcgcgcc cggcgtaggc gcatcggcgg 120
 tggccgtggg gcggcgccact gcgacctcac cagcggcttt cgagctttgt tcgatcaacc 180
 ggccagcatg gtcgaggatg cattcgagac catattcgaa attggtttca tcggggggccc 240
 cgatccgatg cccctccca gttgcgtgag caagcagcgg agtcgtcgcg ggatcgatgg 300
 ccacgggggtg ttcaatggcg gatggtccgc tgcccgccga ctggctcttg cgggagagcc 360
 gatctagcac caccgatccg cgcacgtgga ccgaaaccgc cgagtagatg tcgaaagcgt 420

<210> 174
 <211> 336
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (113)

<223> a, t, c or g

<220>

<221> modified_base

<222> (141)..(142)

<223> a, t, c or g

<220>

<221> modified_base

<222> (154)

<223> a, t, c or g

<400> 174

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cgtccttttc cccaagatag aaaggcagga gagtgtcttc tgcataaata tgaagatctg 60
gtacccatcc gtgatacatt gaggctgttc cctggggggtc gttaccttcc acnagcaaaa 120
cacgtagccc cttcagagcc nnatcctgag caanatgaac agaaactgag gttttgtaaa 180
cgccaccttt atgggcagca accccgatca ccggtggaaa tacgtcttca gcacgtcgca 240
atcgcgtagc aaacacatca cgcataatgat taatttggtc aattgtataa ccaacacggt 300
gctcaacccg tcctcgaatt tccatatccg ggtgcg 336

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<210> 175

<211> 264

<212> DNA

<213> Mycobacterium tuberculosis

<400> 175

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ctcaagcttc atgtccgtac ggctcgggta cgcttccgtc gcagtgtgag agtgataaat 60
gacgaccggg acctcgtcgg catcttccat agcccgccac accttcagtt gctcaccgga 120
atccaaccgg tagaagggtc gcgagcgctc ggcatgggtc atcgggatat gccgctcggg 180
acggtcagag ccctcgggtc cggccagcac tccgcaggct tcgtcggggt ggtcgcgaca 240
cgcattgggccc accatcgcat tcac 264

```

<210> 176

<211> 325

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (1)

<223> a, t, c or g

<220>

<221> modified_base

<222> (230)

<223> a, t, c or g

<400> 176

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ncgccgccag ccaccacgcg cgggtcgggc gccggggcccg ggccgccagg ctgctccgct 60
cggatgatggc acgccaccgc gacaccaccc ggctgcgcta cgtcgagcca taccgggagg 120
agctacatcg gctcggccgc ccagtgttcg ggccctcttt cgagggtcag gtcgataaccg 180
atttgcgcat ccgcagccgc accctggacg acagaaccgt gccctacgan tgcttgctcg 240
gcggggccaa agaacagctt ggcattcctg cgcgattggc cggcgcgagg ctggtctcca 300
aagaagacgc cttccggtg ctgat 325

```

<210> 177

<211> 243

<212> DNA

<213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (224)
 <223> a, t, c or g

<400> 177
 cgccacgttc atgggcaaca accccgatca ccggtggaaa tacgtcttca gcacgtcgca 60
 atcgcgtacc aaacacatca cgcataatgat taattcgtcc aattgtataa ccaacacgtt 120
 gctcaaccg tcctcgaatt tccatatccg ggtgcggtag tcgccctgct ttctcggcat 180
 ctctgatagc ctgagaagaa accccaacta aatccgctgc ttcncctatt ctccagcgcc 240
 ggg 243

<210> 178
 <211> 430
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 178
 atactcaagc ttcaaccgat tgacgcattg tgcgaactga cggcgcccg ccatggccaa 60
 tccggaagac catcattggc cagtggccgg gcgctaacag gttccagccc cccaccagt 120
 ccgctcgaac atgcggtgca acccattcgc aggcggcag ggaaagcacc gcggaagccg 180
 caaagggctg cagttccgcg cccaatagtg tcgtccgcaa ccagatgcgc tcgaaaaccg 240
 cgccggcagt cagcgacccc gacgcgaggt cgagagacgt cgtcagcgcg cccacatggg 300
 gtgccaatcg gcacggcagg tagggccgcg gcaacccgaa cgcgtggtgc atgcccacgg 360
 tccgcaggag gcgcagcacc cgccaatgcc gaagcccacg aaacatcggg cgcattccacg 420
 cttcaacctc 430

<210> 179
 <211> 448
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 179
 agcttttggc aggggtctcct tcgaattcgg cgtgcaccgc tatgggttgc agcagcggct 60
 ggcgcgcac accccactgg cccgggtgtt ttgcgccga acccgatca tggtagcgca 120
 aaaggagatt cgctgtttcg atgctgggat tcgccaccgc gaggccatcg accgattact 180
 cgccaccggg gtgcgagagg tgccgcagtc ccgctccgct gacgtctccg acgatccatc 240
 cggcttccgc cgtcgggtgg cggtagccgt cgatgaaatc gctgccggcc gctaccacaa 300
 ggtgattctg tcccgtttgt tcgaagtgcc ttctgcgac gactttccgt tgacctaccg 360
 gctggggcgt cggcacaaca ccccggtgag gtcgtttttg ttgcagttgg gcggaatccg 420
 tgctctgggt tacagccccga atcgtcac 448

<210> 180
 <211> 380
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 180
 atactcaagc tttgtcacac caactgtttc caccaggcgc tccatccggc gaggggatac 60
 tcccagcagg tagcagggtcg ccaccacgct ggtcagtgcg cgttcagctc gcttgcggcg 120
 ctgcagcagc cagtccggga aatagctgcc ctggcgagc ttggggatcg cgacttctat 180
 ggttgcggca cgggtgtcga aatcacggtg gcggtagccg ttgcgtgat tggaccgctc 240
 atcgttgcgt tcgcggttagc ccgccccgca cagggcgtcg gcttcagccc ccatcaaggc 300
 ggcgatgaac gtcgagagca gcccgcgag cagatccggg ctgcctgtg cgagttggtc 360
 agccagaacc tgctcgggtg 380

<210> 181
 <211> 532
 <212> DNA

<213> Mycobacterium tuberculosis

<400> 181

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ccttaagccc cgcagggccc ggcacgcgcg gtaccgcccc ggtcgcccaa cagatcgctcg 60
atgttcgcgt cgtccgcctc ggcacgtgg tctgtacca gtcaacgta acgccgccgc 120
acatgtcctg cggccgggca aaaacgtgaa aaacgagcgg gcgactgcaa tgtcatgaca 180
ccgacggccg ccgatgggccc cagggctctgg cagattcgat ctgtgcggcc agtgccagca 240
gcgtcgctc gtcatacggc cggccgacga gttgaaccga catgggcagg ccgtcgccgt 300
cgaagtccca cggcaccacg gccgcgggct ggccgggtcag attccagact tgaaagtacg 360
gaacccgctg caccaccagc agcaacgtcg aaactgcacc ccggcggttg taggcgccga 420
tgcgggacgg gccgggtcgcg gcgcctggcg tcacaactac gtcgacatcg tcgaagatcg 480
actggatcgg ctgctcacac cactcgggcg ccgcaggccg ccatccgccg tc 532

```

<210> 182

<211> 477

<212> DNA

<213> Mycobacterium tuberculosis

<400> 182

```

agctttttga gcgtcgcgcg gggcagcttc gccggcaatt ctactagcga gaagtctggc 60
ccgatacggg tctgaccgaa gtcgctgcgg tgcagccac cctcattggc gatggcgccg 120
acgatggcgc ctggaccgat cttgtgccgc ttgccgacgg cgacgcggtg ggtggtcaag 180
tccggtctac gcttgggcct ttgcggacgg tcccgcgct ggtcgcggtt gcgccgcgaa 240
agcggcggtt cgggtgccat caggaatgcc tcaccgccgc ggcactgcac ggccagtgcc 300
gcggcgatgt cagccatcgg gacatcatgc tcgcgttcat actcctcgac cagtcggcgg 360
aacagctcga ttcccggacc gccacgcgca ttggtgatgg aatcggcgaa cttggccacc 420
cgctgggtgt tgacatcctc gacggtgggc aattgcccc ggtaacgttt gccgcct 477

```

<210> 183

<211> 461

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (374)

<223> a, t, c or g

<220>

<221> modified_base

<222> (434)

<223> a, t, c or g

<400> 183

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cgggtccgacc ctgttcgacg gctacctgaa tcaacccgat gccaccgccg cggcggttcga 60
cgccgacagc tggatccgca ccggcgacgt cgcggtgggt gacggcagtg ggatgcaccg 120
catcgtggga cgcgagtcgg tcgacttgat caagtcgggt ggataccggg tcggcgccgg 180
tgaaattgaa acggtgctgc tcgggcatcc ggacgtggcg gaggcggcag tcgtcggggt 240
gcccgcacgat gatctaggcc agcggatcgt tgcctacgta gtcggctcag cgaatgtcga 300
tgcggacggg cttatcaact ttgttgccca acaactttcg gtgcacaagc gcccgcgcga 360
ggtgcgtatc gtanatgcgc tgccgcgcaa cgccttgggg aaagtgtccc agaacattgc 420
tgtcagaagc tganctacgc gaattatcgt gttacgctgg a 461

```

<210> 184

<211> 440

<212> DNA

<213> Mycobacterium tuberculosis

<400> 184

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atactcaagc ttgccgaagt tccgatgggt cgcgccggcg agcccagcga agtcgctacc 60

```

53941100

gtggccgtgt	tcttggcttc	ggatctatcc	tcgttcatga	ccggcaccgt	gttggacgtg	120
actggcggcc	ggtccatatg	acaccgagat	cattgccacg	gtacggcaat	tcgtcaagaa	180
ggaaatcttt	cccaatgcac	cggccctcga	acgtggcaac	agctaccgc	aagaaatcgt	240
cgatcggtg	ggtgttattg	gcttgctcgg	tcgccggctg	caagggtatc	gacaccaccg	300
agttcattct	cgggcggtgc	ggcgcatctg	agctggcggt	gcgcgctgcc	cagcaccgtc	360
ataggtactt	gacgatggtc	cacgtcggac	gagcgcctcc	acgtcgtctg	cgaacggtat	420
gcatggcggc	tacgattctc					440

<210> 185
 <211> 515
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 185						
cggtgtcggc	accggcgctcc	tgcagttggt	aggcctgcag	tttgtgcatc	aggccgatgc	60
cgcggccctc	gtggccacgc	atgtacagca	ccacgccgcg	cccctcacgg	gcgaccatcg	120
ccagcgcggc	gtccagctga	ggcccgcgaat	cgcagcggcg	tgacccaaac	acatcgccgg	180
tcaagcactc	cgaatgcacc	cggaccagca	cgtcgtcacc	gtcggcggtg	ggcccggcga	240
tctcgccgcg	gaccagcgcg	acatgttcca	cgtcctcgta	gatgctgggt	tagccgatgg	300
cgcgaaactc	cccattgacga	gtcgggaatcc	gcgcctcggc	gacccgctca	atgtgcttct	360
cgtgcttgcg	ccgccattcg	atcaagtcag	caatgggtgat	cagcgccaga	ccgtgctcat	420
cggcgaacac	cgcaattcat	cggtgttgcg	ccatcgagcc	ctcatctttt	tggctgacga	480
tctcgcaaat	cgcccccgcg	ggttgacagcc	ggcat			515

<210> 186
 <211> 345
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (256)
 <223> a, t, c or g

<400> 186						
atactcaagc	tttgggtgaa	agccgatcac	cggaagccgc	atgatcagcc	acgttttcg	60
ccgcccggca	tacggcggcg	taccgatctc	cgcgtcatac	acccgcgggt	aatcgccgac	120
ggtgccggtt	cgcgagccga	aggtgacgac	gctgattgaa	tcgagttcca	ggtccagcgg	180
gtggcgagc	aacggcgcgga	gctcaacgac	gtcaatcacg	ttgtcgcttt	ctacggtcac	240
cgacccgggtg	accgtnctcg	cccgggtgcg	tcggccgata	agttgcaccg	ccaccaccgc	300
gacaccgtct	tgacacgcca	cccacccccg	gatccgttgt	tggcc		345

<210> 187
 <211> 366
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (322)
 <223> a, t, c or g

<400> 187						
agcttgctgg	catccgctcc	agtagcgccc	cgcgcggtgg	ttccagcgcc	cgcagatgct	60
ccatgagccg	gccggtcgag	tcggcgccgg	cgttcaccgc	cacccgccag	gagctggcgg	120
ccagcatctc	cgccttcacg	cattgcgcga	tcacagagag	aatatacgtc	tcataattcgt	180
tggaggtcgt	cgcaggcaat	cggtcgatga	cggatttgat	ggcatcgagc	tgtgcttcgg	240
cgtagccctc	cagcacgtcg	gtatcgctgt	ggcgggtccac	gacgaccgca	ccggcgcgcc	300
ggacagccgt	cgggttgga	gntgtgcggc	gatcagttccg	gccagctccg	cctcgggatac	360
agcggc						366

<210> 188
 <211> 423
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (316)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (319)
 <223> a, t, c or g

<400> 188
 atactcaagc ttgctgcagc ttcctatgac tgctcccgaac acctgggggt gtgcctgctg 60
 tgtatgcacg gcatacggac atccttcccc tgagaccgc ggtcgaacca gccacgtgtc 120
 catcatcagg ggtcaacccc ggccaagggc gacggcacgc caagttcgcc gaccgttaac 180
 ctagtgtgtg tagcttcatt tgctgcgagc aaaacagctg gtcggccgtt aggaactgaa 240
 ttgaaactca accgatttgg tgccgccgta ggtgtcctgg ctgcgggtgc gctgggtgtg 300
 tccgcgtgtg gtaacnacna caatgtgacc gggggagggtg caaccactgg ccaggcgctc 360
 gcgaaggctg attgcggggg gaagaagaac tcaaagccag tgggtcgacg cgcaggccaa 420
 cgc 423

<210> 189
 <211> 453
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 189
 agcttgacgc ggagacggac acattgcgaa cattgatgac aaaatagaaa tcattgatgg 60
 tttagtcac caggccgatc aagccttcgc cgagccaaat tccaatcaag aggcccaagc 120
 ccgtaccaat cagcccggca acgagggatt ccgtcattat cagccaaaat aactgctctc 180
 gggttacacc caaacagcgc aatatggcga aaaacggtcg ccgttgacg acattaaatg 240
 tcacggtatt gtagattaaa aagataccca ccaacaaggc aatcaaactg agagcggtta 300
 aattgaccgt aaaagcgtcc gtcattctgt tgacgggtgc ccgttgggta tccgacgttt 360
 ccatacgcac accggccggc agtctttgtt ggatgcgtgt tgcagtggcc tcatctttga 420
 tgatcaaadc gatgtggctc agtcttccgg gca 453

<210> 190
 <211> 402
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (342)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (344)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (389)
 <223> a, t, c or g

53941100

<220>
<221> modified_base
<222> (395)
<223> a, t, c or g

<400> 190
atactcaagc ttcggctcag gcggcgctgc tggtaaagtc gctgaccggt gcagggtttcg 60
acaatgtggt gccgggttcgg cggctacgtg ccatcgagac actggcgcgag gctatcgcac 120
ccgttatcgg ctacgagcaa atcgcggtat gcgttcttga gcatgagtcg gcgaccgctg 180
tcatggtcga caccacgac ggaaagacgc agatcgccgt caagcatgtg tgccgcggat 240
tatcaggact gacctcctgg ctgaccggca tgtttggtcg cgatgccctg cggccggccg 300
gcgtggtcgt ggtccgctcg gatagcgagg tcagcgaatt cncntggcag ctccaaaggg 360
tcctgccggt gccggtcttt gcgcaaaacna aggcncaggt ta 402

<210> 191
<211> 427
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (420)
<223> a, t, c or g

<400> 191
tgatcgcgca tcacctgctt cataaactgg aagcagcgca gcgcttcctt ttcggccgca 60
acatgagcca gcctctcgtc ggcggtcggg tgcagggtgct cgggcagctc ggccgcgaca 120
gccgcctgac cctgaaacca gcttccatat cccgcgacga acgacgccag tccgctacgt 180
aaccctccg cgactgtcca tggacaacag cggttctcc accgaccggg cccgggtgtg 240
gggtgtttcg gcgaccggca gccagggtgt ccacactgcc gacggggcgc gcgagccgtt 300
caccgaccag gccgccgagc aagtccgccc gatcgcatat tccaaccggt tgcggtactg 360
caggttcagc tggcgtactc ctcgtcgcgc tcggcgaggt cttgctccag cacgtcgcan 420
acggcag 427

<210> 192
<211> 347
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (347)
<223> a, t, c or g

<400> 192
caaagcgcg actgctcgcg gcagcccacg acgtgctgcg tcggattgcc ggcggcgaaa 60
tcaattccag gcagctcccg gacaatgcgg ctctgctggc ccgcaacgaa ggactcgagg 120
tcaccccggt gcccggggtc gtggtgcacc tgccgatcgc acaggttggc ccacaaccgg 180
ccgcttgatg cccggtcggc aagcccggca gttgccaaac ccagcgtgat caggctcggc 240
tcgcgagttc cgggaagaag tggctccgcc tgatcaccta ccatccgcca ggatctgcgt 300
gtcttcacca cgcccgccaa ggagggtgtt gtggtgctat cgaccgn 347

<210> 193
<211> 330
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base

53941100

<222> (227)
<223> a, t, c or g

<220>
<221> modified_base
<222> (253)
<223> a, t, c or g

<220>
<221> modified_base
<222> (287)
<223> a, t, c or g

<400> 193
ccggaagccg catgatcagc caagtttcgc gccgcccggc atacggcggc gtaccgatct 60
ccgcgtcata caccgcggg taatcgccga cggtgccggg tcgcgagccg aagggtgacga 120
cgctgattga atcgagttcc aggtccagcg ggtggcgag caacggcgcg agctcaacga 180
cgtcaatcac gttgtcgctt tctacgggtca ccgacccggg gaccgtngtc gcccgggtgag 240
ctcggccgaa aanttgcacc gccaccaccg cgaaaccgtc ttgcacnccg gaagccaccc 300
ccgatccgtt gttgggcccag gttattgggt 330

<210> 194
<211> 215
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (87)
<223> a, t, c or g

<220>
<221> modified_base
<222> (179)
<223> a, t, c or g

<220>
<221> modified_base
<222> (196)
<223> a, t, c or g

<400> 194
ccggaaccgc cgacggcacg gtataacgcc tccgcatatg ggtcgacaac cagcggggtcg 60
gacttctggg cttctagcgt tcgcgcngtc gcgacaaaca gcgcgggtcga accgacactc 120
gttgtgatgt cctagctatc acgttcggta cgcacccaat cgagtctagc gcgggtagnt 180
cagccccgat ctccangctc cgccgagcca ggcgc 215

<210> 195
<211> 225
<212> DNA
<213> Mycobacterium tuberculosis

<400> 195
ctggtttatg tcccgttgaa gttccatcac ccgatgtggc gggagcactg ccagggtcgat 60
ctcaactacc acatccggcc gtggcggttg cgcgccccgg ggggtcggcg cgaactcgac 120
gaggcggtcg gagaaatcg cagcaccacc ctgaaccgcg accaccgcgt gtgggagatg 180
tacttcgttg aggggcttgc caaccaccgg atcgcggttg ttgcc 225

<210> 196
<211> 161

53941100

<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (26)
<223> a, t, c or g

<220>
<221> modified_base
<222> (87)
<223> a, t, c or g

<400> 196
ccgagcagtt ggaatcgct ctgcancaaa ccaatattct gcgcgacgtc gcgcgacgag 60
ctggaccgat taggcgtacg cctccgntcg gacgacaccg gggcactcga tgacccccgac 120
gcctacgctc gcaggatatt gttcgccgga cccctctcta g 161

<210> 197
<211> 240
<212> DNA
<213> Mycobacterium tuberculosis

<400> 197
tatataatac tcaagcttgc cgacgccaac gctcgcgcga tgttgtagc ccgacccggc 60
tcttacatgg caccggtgcc ccacacgtca gcctgtgacg tcctgcaccg cgactcttta 120
catagaatgt ggattgccgg attggggatg tccggcatcg ctcaatctgt agtccgcgtt 180
gtcccgcgag ggccatgtgg atggggggaa ggatccgtgg cgtccgggat caccatgggg 240

<210> 198
<211> 348
<212> DNA
<213> Mycobacterium tuberculosis

<400> 198
atactcaagc ttgccgaagt tccgatgggt cgcgccggcg agcccaacga aatcgctagc 60
gtggccgtgt tcttggcttc ggatctatcc tcgtacatga ccggcaccgt gttggacgtg 120
actggcggcc ggttcatatg acaccgagat cattgccacg gtacggaaat tcgtccagaa 180
ggaaaatcttt cccaatgcac cggccctcga acgtggcaac agctacccgc aagaaatcgt 240
caatcggctg ggtgttattg gcttgctcgg tcgccggctg cgaggggtttc tacaccaccg 300
agttcattct cgggcgtgcc ggcgcattcg aactggcggg gcgcgctg 348

<210> 199
<211> 371
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (307)
<223> a, t, c or g

<400> 199
gcaccggcgt cctgcagttg gtaggcctgc agtttgtgca tcaggccgat gccgcggccc 60
tcgtggccac gcatgtacag caccacgccg cgcccctcac gggcgaccat cgccagcgcg 120
gcgtccagct gaggcccgca atcgacgcgg cgtgacccaa acacatcgcc ggtcaagcac 180
tccgaatgca cccggaccag cacgtcttca ccgtcggcgt tgggcccggc gatctcgccg 240
cggaccaacg cgacatgttc cacgtcctcg tagatgctgg tgtagccgat ggcgcgaaac 300
tccccangac aagtcggaat ccgcgcctcg gcgaaccgct caatgtgcct ctcgtgcttg 360
cgccgccatt c 371

53941100

<210> 200
<211> 165
<212> DNA
<213> Mycobacterium tuberculosis

<400> 200
tgggtccgtgt gcgcatacca atacaacgcg ccggggcacct gacgcggcgg ccgcaaccaa 60
tcggtggcca tcgccatctt ctgctacccg gtcaacggac gcaccttctc ctggccgacg 120
tagtgcgccc acccgccgcc gttgcgtccc atcgatccgg tcaac 165

<210> 201
<211> 390
<212> DNA
<213> Mycobacterium tuberculosis

<400> 201
ggcgtgttgg ccaccggggc cactccgcac aatctgtacc cgaccaagat ctacaccatc 60
gaatacgacg gcgtcgccga ctttccgcgg taccgcgtca actttgtgtc gaccctcaac 120
gccattgccg gcacctacta cgtgcactcc aactacttca tcctgacgcc ggaacaaatt 180
gacgcagcgg ttccgctgac caatacgggtc ggtccacaga tgaccagta ctacatcatt 240
cgcacggaga acctgccgct gctaaagcca ctggcgatcg gtgccgatcg tggggaaccc 300
actggcgaac ctggttcaac caaacttgaa ggtgattgtt tacctgggct acggcgaccc 360
ggcctatggt tattcgacct ccccgcccaa 390

<210> 202
<211> 427
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (9)
<223> a, t, c or g

<220>
<221> modified_base
<222> (18)
<223> a, t, c or g

<220>
<221> modified_base
<222> (25)..(26)
<223> a, t, c or g

<220>
<221> modified_base
<222> (154)
<223> a, t, c or g

<400> 202
cgtccgtgnc ccctcaancg cgtgnngccg aagcggctgg ttacgactcc ctgtttgtga 60
tggacacttc taccaactgc ccatgttggg gacgcccgcag cagccgatgc tggaggccta 120
cacggccctt ggtgcgctgg ccacggcgac cgancggctg caactgggcg cgttggtgac 180
cggcaatacc taccgcagcc cgaccctgct ggcaaagatc atcaccacgc tcgacgtggt 240
tagcgccggt cgagcgatcc tcggcattgg agccggttgg tttgagctgg aaacaccgcc 300
agctcggctt cgagttcggc actttcagtg accggttcaa ccggctcgaa gaggcgctac 360
agatcctcca gccaatggtc aagggtgagc gcccaacggt tticggcgat tggtagacca 420
ccgaatc 427

<210> 203
 <211> 498
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (22)..(23)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (32)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (379)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (455)
 <223> a, t, c or g

<400> 203
 ccgcttccgt gtaaccgagc anngcgagcg anctggcgag gaagcaaaga agaactgttc 60
 tgtcagatag ctcttacgct cagcgcaaga agaaatatcc accgtgggaa aaactccagg 120
 tagagggtaca cacgcggata gccaattcag agtaataaac tgtgataatc aaccctcatc 180
 aatgatgacg aactatcccc cgatatcagg tcacatgacg aagggaaaga gaaggaaatc 240
 aactgtgaca aactgccctc aaatttggtc tccttaaaaa ttacagttca aaaagtatga 300
 gaaaatccat gcaggctgaa ggaaacagca aaactgtgac aaattaccct cagtaggtca 360
 gaacaaatgt gacgaaccnc cctcaaactc gtgacagata accctcagac tatcctgtcg 420
 tcatggaagt gatatcgcg aaggaaaata cgatntgagt cgtctggcgg cctttctttt 480
 tctcaatgta tgagagcg 498

<210> 204
 <211> 265
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (107)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (156)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (165)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (168)
 <223> a, t, c or g

53941100

<400> 204

tgacacccaa	cagagggcac	ttaagatggc	aatgcggccg	cctacctgca	cgttttcgcg	60
atgtcagagg	atgccgaggg	agaacaatgc	gagcacggcc	gctgacnttg	ctcaccgctt	120
tggcggcggt	gacattgggtg	gtgggttgcg	gctgcnaggc	ccgantcnag	gccgaagcat	180
atagcgcggc	cgaccgcatt	tcgtctcgac	cgcaagcgcg	acctcagccg	cagccggtgg	240
agctactgct	gcgcgccatc	acgcc				265

<210> 205

<211> 369

<212> DNA

<213> Mycobacterium tuberculosis

<400> 205

acgggcgacg	ctgaggtggg	cccgcggtta	ttcatgctgt	cgtccacgtc	cagcgacgca	60
ctgcgccaga	cggcccgcca	actagccacc	tggttggaag	aacaccagga	ctgcgtggcg	120
gcctcggatc	tggcctacac	gctggcgcg	ggccgcgcgc	accggccggt	gcgcaccgcg	180
gtgggtggcg	ccaacctgcc	ggagctcg	gaggggttgc	gcgaggtggc	cgacggtgac	240
ccctctatga	cgcggcgggtg	ggacactgtg	atctaagacc	ggtctgggtc	ttctccgggc	300
aagggtctca	gtgggcggcg	atgggcaccc	aattgctcgc	cagcgaacca	gtgttcgcgg	360
ccaccatcg						369

<210> 206

<211> 428

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (280)

<223> a, t, c or g

<400> 206

atactcaagc	ttcgcgagat	ccggatggca	ctcacgctgg	acaagacctt	cacaaaatct	60
gaaatcctga	cccgcatactt	gaacctgggtc	tcgttcggca	ataactcgtt	cggcgtgcag	120
gacgcggcgc	aaacgtactt	cggcatcaac	gcgtccgacc	tgaattggca	gcaagcggcg	180
ctgcgtggccg	gcatgggtgca	atcgaccagc	acgctcaacc	cgtaacacaa	ccccgacggc	240
gcgctggccc	ggcggaacgt	ggtcctcgac	accatgactn	aaaacttccc	ggggaggcgg	300
aggcgttgcg	tgccgcccag	ggcgaaccgc	tgggggttct	gccgcagccc	aatgattgcc	360
gcgcggctgc	atcgcgggcg	gcgaccgcca	ttcttctg	aatacgtcca	ggagtactgt	420
ctcggggc						428

<210> 207

<211> 378

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (304)

<223> a, t, c or g

<400> 207

agcttatgtg	gccgcccacc	taccttatct	agcctagcta	actaaatcca	gtgccgacag	60
tgcgcggctg	gccaccagc	atgaggttat	gaccacggca	tatgccagcg	cgctggcggc	120
gatgccgacg	ctgaccgagt	tggccgctaa	tcacaccagc	catgcgggtg	tgctgggaac	180
gaatttcttt	ggaatcaata	cgatccccgat	cgcgctcaat	gaggccgact	atgcgcggat	240
gtggattcag	gcggccacca	cgatgagtat	ctatgagggc	acctccgatg	cggcgctggc	300
gtcngcaccg	caaaccacac	cggctccggt	actgttcaac	ggcgggtgctg	gcgtttgcca	360
gcgcctgccg	gcgatctc					378

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<210> 208
<211> 284
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (117)
<223> a, t, c or g

<400> 208
atactcaagc ttgccaccca tgccgagcaa ggtcgactca gcgatgacga attgttcttc 60
ttcgcggtgt tgctgctggt tgcgggctat gagagcactg ctcatatgat tagcacnttg 120
tttctgacgc tggccgacta tccagatcag ctgacactcc ttgcgcagca accagacctg 180
atcccgtcgg cgatcgagga gcacctccgc tttatatcgc aatccaaaac atctgccgca 240
caacgcgcgt cgactattcg gtcgggtcaag cggtcatccc ggga 284

<210> 209
<211> 236
<212> DNA
<213> Mycobacterium tuberculosis

<400> 209
ccggggtaga acgatgcat ctggggccat tgcacatcgg tggtagcagg aaaccgcgcc 60
gtgtgcgcgg tctcgagat cagaacgtgg tcgcagttga caccgcgggc tttcagccag 120
tcgcgataat cggcgaagtc ggcgctgcc gccccaacta gcgcgacctc gccacctagc 180
acaccgatgg cgaaggccat gtttccggcc acgcgcgccg ggtgcatcat caactc 236

<210> 210
<211> 278
<212> DNA
<213> Mycobacterium tuberculosis

<400> 210
atactcaagc ttggcggcaa cgccactacc gggctcacca ggtcctgtgc cgccaccgcc 60
ggcgccgaaa gcaccatcag gtcgtagttg tctggacgtt cgacaccgta agcgaacaca 120
atgccgccgc ccatgctgtg cccgagcacg atgcgcttgc acccgggata tttccgggtg 180
gcatcccaa cgaggggtgc gaaagtcagc gtgtatctga gatgtctctc actatcatcc 240
gtttggcacc cgagcgggca tgcccgcggg gggtaaac 278

<210> 211
<211> 360
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (303)
<223> a, t, c or g

<400> 211
gtcgacggca tcaagggtccg cagtgatggt gttcatctca cccaggaagg cgtgaagtgg 60
ctgataccgt ggcttgagga ttcggtgcgg gtcgccagtt aatccgccgt gtgctccgga 120
tgagcgcgac ggtaaccctg gaattgtgct gtgtgctggc tgtgtcgttg tgatgagcct 180
gtctaagtgg tgcgtaaccg tttgacgagc cgcggcctcg ctgaaacat tgaagccgc 240
acgtctgggt ttgtatttac acaacgaggg cgctccccga tctggcgcgc gcaacgaggt 300
gcncactatc cattcgaggt gaactggact ccttgatgct catgccgggt cggttttgtc 360

<210> 212
 <211> 256
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 212
 atactcaagc ttgcgttcga tgaagtagtc gtcggtcagc gccgcctctt cgagctcctt 60
 ggcgatgcc agcaaggagt catcgccgcc gagcttggcc aggatcttgt cggcctgttc 120
 cttgacgatg cgggcccgcg gatcgtagtt cttgtagaca cgatgaccga aacccatcaa 180
 tttgaccccg gcctcgcggg tcttgacctt gcgttacaaa ctcgctgacg tcgtcgccgc 240
 tgtcgcgaat gccctc 256

<210> 213
 <211> 262
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (1)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (24)
 <223> a, t, c or g

<400> 213
 ngtaagccg agcatgcgcg aggnaacgac gaacccaaca agccatggtg gttggcgccg 60
 tcgagaggtc ggcggtcgcc acaacgggaa gatcgcttgc agcgctcgtc gaccgccgcc 120
 tcgagttggg tcataacgaa gtagctgatg ccgatcatgt cgacgtttcc gtcgcatcag 180
 cgtgcagcgg cgaccctc gacgaggtct cgggtgccgc gcggccaggg caccagcagt 240
 gacgattcca ggcgccgtcg gg 262

<210> 214
 <211> 336
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (336)
 <223> a, t, c or g

<400> 214
 cgataatcgc ttccggtgtaag tgcagcagct ttacgacggc gactcccatc ggcaattttct 60
 atgacaccag atactcttcg accgaacgcc ggtgtctgtt gaccagtcag tagaaaagaa 120
 gggatgagat ctccccgtgc gtcctcagta agcagctcct ggtcgcggtc attacctgac 180
 catacccgag aggtcttctc aacactatca ccccgagca cttctagagt aaacttccca 240
 tcccgaaccac atataggcta aggtaatggg cattaccgcg agccattact cctacgcgcg 300
 caattaacga atccaccatc ggggccgctg gtgtcn 336

<210> 215
 <211> 259
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (1)

<223> a, t, c or g

<220>

<221> modified_base

<222> (243)

<223> a, t, c or g

<400> 215

```
naataactcaa gcttttctcgt gattaccacc cgtgtaattt gggatgggca aaaaggcgaa 60
tcaccgcgtg gccacaaacg ccgggagggg caatctcggg cggctagggc ttctcgcggg 120
aaggcccgaa cgtacggcgt ttcaacacgt cgcgtcggcc tccgaccgag aacattcggg 180
gatggcagca acctggtatc accctggccg ggcaatgatc tgcagcgtcg ccgcgggtag 240
tgnccgcccc ggcggctac
```

<210> 216

<211> 325

<212> DNA

<213> Mycobacterium tuberculosis

<400> 216

```
ccaactagag catcgggaca tacggagtca actaccggc caacgggtgat ttcttgggcg 60
ccgctgacgg cgcgaacgac gccagcgacc acattcagca gatggccagc gcgtgccggg 120
ccacgatgtt ggtgctcggc ggctactccc aggggtgcggc cgtgatcgac atcgtcaccg 180
ccgcaccact gcccgggtctc gggttcacgc agccgttgcc gcccgcagcg gacgatcaca 240
tcgccgcgat cgccctgttc gggaatccct cggggcccgcg ctggcgggct gatgatcgcc 300
ctgacccctc aattcgggtc caaga
```

<210> 217

<211> 300

<212> DNA

<213> Mycobacterium tuberculosis

<400> 217

```
atactcaagc ttgctgcagc ttctgttgac tgctcccgaa acctgggggt gtgcctgctg 60
tgtatgcacg gcatacggac atccttcccc tgagaccgc ggtcgaacca gccacgtgtc 120
catcatcagg ggtcaacccc ggccaagggc gacggcacgc caagttcgcc gaccgttaac 180
ctagtgtgtg tagcttcatt tgctgcgagc aaaacagctg gtcggccggt aggaactgaa 240
ttgaaactca accgatttgg tgccgcccgt aagtgtcctg gctgccgggt cgctggtgtt 300
```

<210> 218

<211> 265

<212> DNA

<213> Mycobacterium tuberculosis

<400> 218

```
agcttgccgc gcgtggcgat cgcggttcaa ggccgcgtct tcgagcaca cgagcgaaga 60
cagctcggcg acggagcctt tatcgacatc cgttcgggct ggctgaccgg cggcgaagaa 120
ctgctggagc cgttggtgtc gacggtgccg tggcgagccg agcgccgtca gatgtacgac 180
cgggtggtcg atgtgccgcg gctggtgagt ttacacgacc tgaccatcga agatccgccg 240
catccgcagc tggcgcggtg gcgcc
```

<210> 219

<211> 362

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (101)

<223> a, t, c or g

<220>

<221> modified_base

<222> (104)

<223> a, t, c or g

<400> 219

```
aataactcaag cttgcgacacg accaggacgt cgagtggcgc ttgcagtac ttggcgacct 60
caaaggccac cggtagccccg ccgcgcggca agccaaggac nacnacggcc ttgccggata 120
gctgcgccag gcgttgcgcc aactggcgctc cagcgtcgcc acgatcgta aagagcttca 180
tctgccgagt gtgtcgccat ctcatggctc caaatatgga attagggtccc tgggccgact 240
gacgacagtc cctcagcgac cggattgcgc atccccgctt gtacgctgct ccgcaaatacc 300
cgggcttgcg tccgcggaag cgaactcggc ggcgctacgg tggtagctca cticggccgt 360
gc
```

<210> 220

<211> 486

<212> DNA

<213> Mycobacterium tuberculosis

<400> 220

```
ggttggtgcg gtccaccttc gcggcggcgg cgcatatgc cttgctggtc ttgctcattt 60
gatatccaat ctatgggtcg tggttactca gcgggccgaa gctggccctc ccacgggtag 120
ggccctattc gacggtgatg cccatcgacc gagcgggtacc ggcgatgac ttggccgcag 180
cgtcgacgctc gttggcgttg aggtccgtct tcttgggtctc ggcgatttcg cggacttgat 240
cccagggtgac tttggcgacc ttggctctgt gcggctccgc cgaacccttc gccacaccag 300
cggccttaag cagcagcttg gcggcgggcg gcgtcttcag cgtgaaagtg aagctacggg 360
cttcataaac ggtgatctcc accgggatga cgttgccgcg ctggttctcc gtcgcggcgt 420
tgtacgcctt gcagaactcc atgatgttga cccgtgctga ccgaacgcgg ggccactgg 480
cggggc
```

<210> 221

<211> 373

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (229)

<223> a, t, c or g

<220>

<221> modified_base

<222> (265)

<223> a, t, c or g

<400> 221

```
ataactcaagc ttttcgaccc gcaagccggc ggtgcccctc ctcgttccgc tgcccgggtct 60
gctcgatcgg ttcgggggtcg ccgcgctagg cccaattgcc cggctcctcc tcgggccggtt 120
ccacaacccg catcgtcgcc gggctagggt caagccatgc cggtaaacc caggacgcca 180
gtgctgatcg gctatggaca ggtcaaccac cgaggcgaca tcgacgcna aatcagttcc 240
atcgaacccg tcgacctgat ggcnccgcg gcccggaag ccgccgagtc caccgtgctc 300
gaagcggtgg attccatccg tgtggtgcac atgctgtcgg cgcattaccg gaattcccgg 360
gcgtctcctc ggc
```

<210> 222

<211> 331

<212> DNA

<213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (1)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (307)
 <223> a, t, c or g

<400> 222
 ncctggttca tgaactggaa gcagcgcagc gcttcctttt cggccgcaac atgagccagc 60
 ctctcgctcg cggtcgggtg cagggtgctcg ggcagctcgg ccgcgacagc cgcctgaccc 120
 tgaaaccagc ttccatatcc cgcgacgaac gacgccagtc cgctacgtaa cccctccgcg 180
 actgtccatg gacaacagcg cgttctccac cgaccggggc cgggtgttgg ggtgttcggc 240
 aacggcaacc aagttggtcc acactgccga cgggcgccgc aaatccgttc accgaaccag 300
 gccgccnaaa caattccgcc cgatcccata t 331

<210> 223
 <211> 377
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (377)
 <223> a, t, c or g

<400> 223
 atactcaagc ttgtcgggat caatctcgag ggcattccag cacgaaaagt aaactctatc 60
 aagctttttg acgacaccca cggacgcccc atatattgtt ggggtgggcaa gaacggtccc 120
 tacctggaac gtttggtggc cggcgacacc ggtgagccca cgccgcagcg ggccaacctc 180
 agcgactcga ttaccccgga cgaactgact ctacaggtgg ccgaagagct ctttgccaca 240
 ccgcaacagg gacggacttt gggcttggac ccagaaaccg gccacgaaat ctttgccagg 300
 ggaaggccgg tttgggcctt atgttaccta tatcctgccc gaacctgcgg ctgatgcggc 360
 cgcggccgct cagggan 377

<210> 224
 <211> 436
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 224
 agcagctagc cgcgctcgcc gcgctggtcg gtgcgtgcat gctcgcagcc ggatgcacca 60
 acgtgggtcga cgggaccgcc gtggctgccg acaaattccg accactgcat caggatccga 120
 taccggtttc agcgcttgaa gggctgcttc tcgacttgag ccagatcaat gccgcgctgg 180
 gtgcgacatc gatgaagggt tggttcaacg ccaaggcaat gtgggactgg agcaagagcg 240
 tggccgacaa gaattgcctg ggctatcgac ggtccagcac aggaaaagggt ctatgccggc 300
 accgggtgga ccgctatgcg cggccaacgg ctggatgaca gcatcgatga ctccaagaaa 360
 cgcgaccact acgccattca agcggtcgct ggcttcccga ccgcacatga tgccgaagaa 420
 ttctacagct cctccg 436

<210> 225
 <211> 539
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base

<222> (18)

<223> a, t, c or g

<400> 225

```

cgcgactggc tccccggncc gctgctcggg tccgcccata gagaccggga tgtcgcccga 60
cgacggggcag ccgggtttgcg tgggacgggg cggggggtcgg gcagcccaag caacggggcta 120
gtccccgaat cctacggagc cgtcacctac gcctacgtaa tagtagctat caataacagt 180
tgacatacgc aacgatctgt gagatcaata ttgcctgacg catgtcaaga caggcgtcaa 240
gacaggtgtc aataattcgc tccgctgggtg acggttaaccg gtcgtgcggg tgtgtgacgc 300
ctaaggaagg agtgtgggtg gtgacgtga gagtggttcc tgagggtttg gcggccgcca 360
gtgcggcggt ggaggcgttg accgcacggc tggccggccg acacgctggc gcggcgccgg 420
cgattacggc ggtggtggcg cccgcggcgg atccggtgtc gttgcagaat gcggtggggg 480
ttagcgcctt aagtagccag catgccgcga tcgccggcga aagggtccaa gaactgggt 539

```

<210> 226

<211> 517

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (304)

<223> a, t, c or g

<400> 226

```

atactcaagc ttattgaacc gcgggtcgca ggcaaagtgg acctcataac gactcgggtc 60
cagcgaccgc gccaacacga acggccggac gacgtgggcc agggtcgcgg cctcccctac 120
aaacaggatc cgttgccctgc gaacgacagg ctccgggtgcg gcgttgggcg ccgtgctcgt 180
cccagcgctc ggtcccgggt cgccggcgac gcttgtttcc tccatactcg ccccctaata 240
tcgaggcagc ccgtacccgc aggcaacctc ccaaaaatgc aatcccgcaa aatgcaatgc 300
gtcnagctat ttctcacacc gaccgctagt tgcggatcag aaatccgttg ggcgcggaag 360
tccagccgaa tttgttctcc cgctccgcat catgcttgta atcgtttga aattcatcct 420
catatgcctc gatcgcttca tagggtccag gcccaaacc gggcaggact ggggtggccgt 480
tgatgttga atcctccact actaggtatt caccggc 517

```

<210> 227

<211> 488

<212> DNA

<213> Mycobacterium tuberculosis

<400> 227

```

gtctcgatca tggccaaaga gctcgacgaa gccgtagagg cgtttcggac ccgcccgtc 60
gatgccggcc cgtatacctt cctcgccgcc gacgccctgg tgctcaagg gcgcgaggca 120
ggccgcgtcg tcggggtgca cacttgatc gccaccggcg tcaacgccga gggctaccga 180
gagatccttg gcatccagg cactccgcc gaggacgggg ccggctggct ggcgttcttc 240
cgcgacctgg tcgcccggcg cctgtccggg gtcgcgctgg tcaccggcga cgccacgcc 300
ggcctggtgg ccgcgatcgg cgccaccctg cccgcagcgg cctggcagcg ctgcagaacc 360
cactacgcag ccaatctgat ggcagccacc ccgaagccct cctggccgtg ggtgcgcacc 420
ctgctgcact ccattctacga ccagcccga gccgaatcag ttgttgccaa tatgatcggg 480
ttctcgac 488

```

<210> 228

<211> 264

<212> DNA

<213> Mycobacterium tuberculosis

<400> 228

```

atactcaagc tttcgtcagt tcatggcgcc agcagaccaa caagagcatc gggacatacg 60
gagtcaacta cccggccaac ggtgatttct tggccggccg tgacggcgcg aacgacgcca 120
gcgaccacat tcagcaaatg gccagcgcgt gccggggccac gaggttgggt ctcggcggt 180

```


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actcccaggg tgccggccgtg atcaagatct tcaccgccgc accactgccc ggcctcgggt 240
tcacgcatcc gtttgccgc cgcc 264

<210> 229
<211> 229
<212> DNA
<213> Mycobacterium tuberculosis

<400> 229
gccccgtgta atttgggatg ggcaaaaagc gaagcaccgc gtggccacga acgccgggag 60
ggacaatctc gggcggctag ggcttctcgc gggaaggccc gaacgtacgg cgtttcaaca 120
cgtcgcgtcg ccctccgacc gcgaacattc ggggatggca gcaacctggt agcaccctgg 180
ccgggcgatg atctgcagcg tcgccgcggg tagtctccgc ccgggccgc 229

<210> 230
<211> 266
<212> DNA
<213> Mycobacterium tuberculosis

<400> 230
atactcaagc ttcctttgac cgaacgcgtc caccgcaccg tgagattggt ggcgccattc 60
gtcgtggtgt agctgctgtt ggcggcgtcg ccgtattgtg cgggccagcc ttgtgcgggg 120
gccgcttcta cccacaagtc ggcacttccg caaccgccca gctcgaccgc gaattacggc 180
ggccgcaacg gccgccgaa ggcgtcacgc aatcgcttat cctttccagg ttcccaaata 240
ctccgcttac ttgggtcctt catcgg 266

<210> 231
<211> 258
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (207)
<223> a, t, c or g

<400> 231
ggcagcggcg acaaccggaa cgtccgcacg gtgctcaatc acgggtgcac ggtgtgcatc 60
agaatggcgg gggttcgttg tcgcgggtgag gcgttcggcg aggaggtagt gtctaccctt 120
tgcccgcggg ttcgtgcgga ctgaaagggg tttcattggg aaccacggc tgcgtatcgc 180
agggcctcgg tgacgtctgc ttcctcnagc tcaggaagtt cggcgagaat ctcggtggat 240
gttatttggt ccgcctac 258

<210> 232
<211> 224
<212> DNA
<213> Mycobacterium tuberculosis

<400> 232
atactcaagc tttctcggct tctctgatag cctgagaaga aacccaagt taatccgctg 60
cttcacctat tctccagcgc cgggttattt tcctcgcttc cgggctgtca tcattaaact 120
gtgcaatggc gatagccttc gtcatttcac gaccagcgtt tatgcactgg ttaagtgttt 180
ccatgagttt cattctgaac atcctttatt cattgttttg cggt 224

<210> 233
<211> 333
<212> DNA
<213> Mycobacterium tuberculosis

53941100

<400> 233
atactcaagc ttggtgaccg gcaccgcgat acgttgcggc aggcattctgg gctggcggtg 60
gttcgccgct ccgaagccgt cgaacacccat cgccagcgcg gcttccacat caacgacccat 120
ttcgccagc ttgcggcgca tcagcggctt gtcgatgagc gccccaccga atgcccgcg 180
ctgcccggcg tatcacatcg attcgacccat cgcgcgcgcg gcgttgccga gggcgaaacga 240
ggcggtgccc aaccgcaatc tgtttggtca gctccctcat gcgggttgat tccttgccgt 300
ccggacgggc ccgcgtcatg cgctcggttc gcc 333

<210> 234
<211> 407
<212> DNA
<213> Mycobacterium tuberculosis

<400> 234
ccgttgcgca gcgtgagccg atagttagaca tccggctcgg tgaagggtgaa atcgatggcc 60
aggtcgaggt cccatgcgcg tgggccattg atgctgatcg ccaggacgct aaagatttgg 120
tccggcgta gctgggagaa aaacgtgggc gccgggactt gcccgagct gcccgggttc 180
ccgtcgcgca gctcggcggc cccggtcaga aagaaattgc gccaggctcg acactcccg 240
ccgtagccca gctgctccag ggtgtcggca tagagcccg gggccgcagc gtgctcgctg 300
tcggcgaaac ccgcatggtc gagaagcgtt gccgccaac gggaaatcac ctgctcgaa 360
agcttcgcgg gccagctcca gactcggtc gatgccaccc aacgcgt 407

<210> 235
<211> 389
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (46)
<223> a, t, c or g

<400> 235
atactcaagc ttgcggatgt tacccttgac agcgtgaact atgtcnaaac acacggcacc 60
ggaacgggtg tgggggaccc catcgagttc gagtcgctgg cggccactta tggcctgggt 120
aaaggccagg gcgagagccc gtgcgcatg gggtcggtca aaaccaacat cggccacctg 180
gaggcggccg ccggtgtggc tggattcatc aaggcgggtg tggcgggtgca acgtgggcac 240
attccccgca acttgcaatt caccggtgg aaccgggcca tcaacacgct ggcgacgcgg 300
ctgttcgtgc cgaccgaaag cgccccgtgg ccggcggtcg ccggtccacg cagggtcgcg 360
gtgtcatcgt tcggcctcag cgggaccaa 389

<210> 236
<211> 432
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (365)
<223> a, t, c or g

<400> 236
ccggtaacca gatcagctcg tcgacctcac tgccgggggt gaattcccca ccggtgctgc 60
gcgctgcccc gtagtgacc ttcttgacgc ctcgaaaagg ggagtcggtc gggtaggtca 120
ccgtcaggag ccgcctaccc aggttgggcg ggtgaccggt ctctcgagt atctcccgca 180
ccgccccac cggtgcggtc tcgcccggat ccactttgcc cttgggcagc gaccagtcgt 240
cgtaacgggg gcgggtgaatg acagcgatct cgaccggccc ttccgaatcg gcaactgccg 300
gtcgccagaa caccgcaccg gcggcgatca caatccggcc cgccgagcgc cggcgggcgg 360
acganttctg gatcgacacc tcaactcctg cagggtcaatt cggccaagct gctcgcggtc 420

gtggatgtgg tc

432

<210> 237
 <211> 287
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 237
 atactcaagc ttgatgccgc cgaaaccgag cgtgagcacg ccgccaccca ccacgcgcgg 60
 gtcgggcgcc gggcccgggc cgccaggctg ctccgctcgg tgatggcacg ccaccgcgac 120
 accacccggc tgcgctacgt cgagccatac cgggcggagc tacatcggct cggccgcccc 180
 gtgttcgggc cctctttcga ggtcgaggct tataccgatt tgcgcatccg cagccgcacc 240
 ctggtcgtct cgtaccgtgc cctacctctg cttgtcgggc ggggcca 287

<210> 238
 <211> 272
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 238
 tccgtacggc ccgggtacgc ttccgtcgca gtgtgcgagt gatagatgac gaccgggacc 60
 tcgtcggcat cttccatagc ccgccacacc ttccagttgct caccggaatc caaccggtag 120
 aaggctcggc agcgcctcggc attggtcatc gggatatgcc gctcgggacg gtcagagccc 180
 tcgggtccgg ccagcactcc gcaggcttcg tcgggggtgg cgcgacgcgc atgggccacc 240
 atccatccac cagggtctgcg cgaatcacc gc 272

<210> 239
 <211> 410
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (334)
 <223> a, t, c or g

<400> 239
 ggacacattg cgaacattga tgacaaaata gaaatcattg atggtttgag tcaccaggcc 60
 gatcaagcct tcgccgagcc aaattccaat caagaggccc aagcccgtac caatcagccc 120
 ggcaacgagg gattccgtca ttatcagcca aaataactgc tctcgggtta cacccaaaca 180
 gcgcaatatg ccgaaaaaac gtcgccgttg cagcagatta aatgtcacgg tattgtaaat 240
 taaaaagata cccaccaaca aggcaatcaa actgagagcg gttaaattga ccgtaaaagc 300
 gtccgtcatc tgtttgacgg tgtcccgttg ggtntccgac gtttccatac gcacaccggc 360
 cggcagtcct tgttggatgc gtgttgacgt ggcctcatct ttgatgatca 410

<210> 240
 <211> 439
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 240
 gcctggcccc ggtgaaggcc gacctcgacg ccaaagccgc tgatccggca catgagtcgg 60
 tggactggga cttgaagtcg ctgcgatggg cgtggaaccg agccaaagat gacgtggcgc 120
 cgtggtgggc cgagaattcc aaggagtgtc actcgtcggg gttggccgat ctggcccagg 180
 gcctggctaa ttggaaagct ggcaagaacg ggacccgcaa aggccggcgg gtgggcttcc 240
 cgcgattcaa atccggggcgg cgtgatcctg gcagggtgcg gttcaccacc ggcaccatgc 300
 gcatagagga tgaccggcgc acgatcacgg tcccgggtgat cgggccgctg cgggccaagg 360
 agaacaccgc ccgggtgcaa cgccacctcg tgagcggggc cgcgcagatc ctgaacatga 420
 ccttgtcgca gcggtgggg 439

<210> 241
 <211> 356
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (22)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (241)
 <223> a, t, c or g

<400> 241
 taactcaagc ttcaagtccg cngtccgacc ctgttcgacg gctacctgaa tcaacccgat 60
 gccccgccgc ggcgttcgac ccgacagctg gtaccgcacc ggcgacgtcg cgggtggtcga 120
 cggcagtgagg atgcaccgca tcgtgggacg cgagtcggtc gacttgatca agtcggggtgg 180
 ataccgggtc ggcgcgggtg aaattgaaac ggtgctgctc gggcatccgg acgtggcgga 240
 ngcggcagtc gtcgggggtc tcgactatta tctaggccag cggatcggtg cctacgtagt 300
 cggctcagcg aatgtcagtg cggacgggct tatcaacttt gttgcccaac aacttt 356

<210> 242
 <211> 341
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (309)
 <223> a, t, c or g

<400> 242
 ccatgtcgcc caacatatcg tcgatgttcg cgtcgtccgc ctcgcgcacg tgggtctgtca 60
 ccagtcaacg ttaacgccgc cgcacatgtc ctgcggcccg gcaaaaacgt gaaaaacgag 120
 cgggcgactg caatgtcatg acaccgacgc cgccgatggg cccagggctt ggcagattcg 180
 atctgtgcgg ccagtgccag cagcgtcgcc tcgtcatacg gccggccgac gagttgaacc 240
 gacatgggca tgccgtcgcc gtcgaagtc caccggcacca cggccgcggg ctggccgggtc 300
 agattccana cttgaaagta ctgaagccgc tgcaccacca g 341

<210> 243
 <211> 336
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (236)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (242)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (248)

<223> a, t, c or g

<220>

<221> modified_base

<222> (251)

<223> a, t, c or g

<400> 243

cgaaagcgtg	aaacagctcg	cggcagcccc	cgacgtgctg	cgtcggatag	ccggcgggcg	60
aagatcaatt	ccaggcagct	cccggacaat	gcggctctgc	tggcccgcaa	cgaaggactc	120
gaggtcacc	cggtgcccgg	ggtcgtgggt	cacctgccga	tcgcacaggt	tggcccacaa	180
ccggccgctt	gatgcccgg	cggcaagccc	ggcagttgcc	aaacccagcg	tgatcntgct	240
cngctctnta	nttcggcgaa	gaagtggctc	gcctgatcac	ctaccatcgg	ccaggatctg	300
cgtgtcatca	caacgctcgc	caaggaggtt	gttgtg			336

<210> 244

<211> 337

<212> DNA

<213> Mycobacterium tuberculosis

<400> 244

tccgccacgc	ttcgcgccgc	ccggcatacg	gcgcgtaccg	atctccgcgt	catacaccgc	60
gggtaatcgc	cgacggtgcc	ggttcgcgag	ccgaagggtga	cgacgctgat	tgaatcgagt	120
tccagggtcca	gcgggtggcg	cagcaacggc	gcgagctcaa	cgacgtcaat	cacgttgctg	180
ctttctacgg	tcaccgacct	ggtgaccgta	gtcgcgccgt	gcgctcggcc	gagaagctgc	240
accgccacca	ccgcgacacc	gtcttgacag	cggacccacc	ccggatcggt	tgttggccaa	300
ggtaattggg	tcattccatt	tgacgggacg	ccgacct			337

<210> 245

<211> 337

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (162)

<223> a, t, c or g

<400> 245

cattctttta	cagttgtttt	gggctcggca	tggttagcca	acgttctgcg	gtccaccata	60
tcactttggt	ccggtagcgc	tcgtccgggg	tatgctgccc	ccgggattct	cgctgctatt	120
actccccccg	aagaaccgcc	accggtccag	ccggtggggc	gncgcgggtc	catcacaac	180
tgaacccccca	acagggacat	gcttatcggt	agggcgcgcg	ccaaggcggc	agcaatcgca	240
tactgcgct	ctgcgcgtca	ctattaaccc	acccggactt	cacttccacc	acccggaatg	300
gcgcccgggtc	attgatcatc	tggcgcaccg	cggataa			337

<210> 246

<211> 343

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (267)

<223> a, t, c or g

<400> 246

cggtgtcctg	cagttggtag	gcctgcagtt	tgtgcatcat	gccgatgccg	cggcctcgtg	60
gccacgcatg	tacagcacca	cgccgcgccc	ctcacggggc	aacatcgcca	gcgcggcgctc	120
cagctgaagc	ccgcaatcgc	agcggcggtg	ccaaacacat	cgccgggtcaa	gcactccgaa	180

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tgcaccggac	cagcacgtcg	tcaccgtcgg	cgttgggccc	ggcgatctcg	ccgcggacca	240
tgcgcgacat	gttccacgtc	ctcgtanatg	ctggtgtagc	cgatggcgcg	aaactcccc	300
tgacgagtcg	gaatccgcgc	ctcggcgacc	cgctcaatgt	gct		343

<210> 247
 <211> 340
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (196)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (199)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (211)
 <223> a, t, c or g

cggcattctgg	cggtctgaacc	tggtcttggg	caacatgccg	aggatcgctt	cttccaccac	60
gcggtcgggg	tggcgttgca	ttacctcacc	gatggtgcgc	ttgtgcaggc	cgccgggata	120
ccccgagtcg	cggtaaacca	tcttgtgctg	cagtttgtcg	ccgctgatgg	cgaccttgct	180
ggcgttgatc	acgatnacna	atcaccgcca	ncgacattgg	gggcgaacgt	cggtctcgct	240
ttgccgcgca	gcaggctggc	cgccgcgacg	caaggcgcca	accaccacgt	ccgtggcgct	300
gatgacgtac	caccatcgcg	tggtgtcacc	cgcttggggc			340

<210> 248
 <211> 322
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (22)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (31)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (258)
 <223> a, t, c or g

gcggcaaaaa	ttgaagcact	cntggccact	nccgccggga	gggacaatct	cgggcgggcta	60
gggcttctcg	cggaaggcc	cgaacgtact	gcgtttcaac	acgtcgcgct	gccctccgac	120
cgcgaaacatt	ctgggatggc	agcaacctgt	tagcaccctg	gccgggcgat	gatctgcagc	180
gtcgccgcgg	gtagtcgccc	ccgggcggct	acagtctgaa	acgcgatgac	catcgatgtg	240
tggacgccc	atccgacnca	acggttccta	cactgtgata	tgttcgccct	gctgcgccgg	300
tggacggtgg	gtctatcccc	ga				322

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<210> 249
<211> 278
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (191)
<223> a, t, c or g

<400> 249
cgcggtgaac tgaaggggtg ccgcccggct cgagcaggca agccatttgt tcgatgcggt 60
taccgaagat ctcttcggtg actgcccgcc gccggccagc tcggctcagt gtccggcggt 120
ggtcgccgcg gcgacaatct tggcggtccac ggtgggtcggg gtcgatgcccg cgagcaggat 180
tggcgagcgg ncggtcagcc ggggtgaactt cgtcaagagc tgacgctgcg gttggggagg 240
cgaatcatg tcggtgcgta gcctcgacta ggccccggg 278

<210> 250
<211> 336
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (308)
<223> a, t, c or g

<400> 250
tgacaacgcg gcggcgatta ccccgtacc gcagcagcat gacgcggtag cgaacaccgc 60
cgatgcagc gcaggtgcgt cgatgtgctc acggaatcgc cccggcaccg cgatctcgag 120
gatcaccagt gccaccccct gcagcgcgac accgacgatt ccgtacaccg ccacgccgat 180
caggccctgg gccagctgat tggagctggc gtatatggcg gcgatgggtga cgatgggtcat 240
cgctcttac attgtggcgg ccagaaccac ggcgttgggg cggcggtcga tgaacactag 300
gcgaccanat ccccggggtc aacaggttga ccatcc 336

<210> 251
<211> 95
<212> DNA
<213> Mycobacterium tuberculosis

<400> 251
cgcgacatc ccgaacgagg acacgcgacc gcttcggtgt gtgatctatc agggctcgca 60
ccacgcgcaa ccgcttcgg ctacctagac gcggt 95

<210> 252
<211> 94
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (78)
<223> a, t, c or g

<400> 252
gcatgcgggt gatgccgttc tcagtgcgca acagcgttcg acgcggcata cccagccgca 60
catgccgtgc acgccgngc cggggcggga atct 94

<210> 253

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<211> 302
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (13)
<223> a, t, c or g

<220>
<221> modified_base
<222> (16)
<223> a, t, c or g

<220>
<221> modified_base
<222> (158)
<223> a, t, c or g

<400> 253
ctcaagcttc agncntcta agcgggtctgc gcggcgatcg caaagatcgc cctttgccgg 60
cgttgggggc ttctgctcgg ggggtgttga caccttctcg aacacctcgg caccgacacc 120
accaccgtcg gcttgaacac cgccaacatc ggcagcanat cttgatgtcc tggatgaatcc 180
acgggtgactt tggagtgga ggcggccata ctgatcgcgc gcgccaccac atgagctagc 240
ggcaggaaaa ccagcagccg ctcacccttg cgcagcagcg tcgggtgata tgcctggcgc 300
cc 302

<210> 254
<211> 291
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (8)
<223> a, t, c or g

<220>
<221> modified_base
<222> (213)
<223> a, t, c or g

<400> 254
agtcgaangt cagtccggtc tcctctccga ctacggccaa gaactggggc gacgggtgtca 60
gtgcagaaca gcggaaactg gtggcgccct aggcgagcga acgctcaca acggcggtga 120
ccgcttcttg tcgtgcacca tcgagcccg tccagcccgg ccgctgccc tcagccgcat 180
ccactggatg cccttctcgg cggtttcaat cangtacagg cgacgttcgc caccatcgtg 240
ccggggcacg gttagcgaga aacgccgact tcaccgattg cctcggatg g 291

<210> 255
<211> 454
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (175)
<223> a, t, c or g

<400> 255
agcttcgcgg cgtggcgatc gcggttcaag gcgcgctctt cgagcacaac gagcgaagac 60

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```

agctcggcga cggagccttt atcgacatcc gttcgggctg gctgaccggc ggcgaagaac 120
tgctggacgc gttgttgtcg acggtgccgt ggcgagccga gcgccgtcag atgtncgacc 180
gggtgggtcga tgtgccgcgg ctggtgagtt ttcacgacct gaccatcgaa gatccgccgc 240
atccgcagct ggcgcggatg cgccggcgcc tcaacgacat ctacggcggc gaactgggtg 300
agcccttcac caccgccggg ctgtgctact accgcgacgg ctctgacagc gtcgcctggc 360
atggcgacac cattggtcgc ggcagcactg aggacactat ggtggcgatc gtcagcctcg 420
gcgccacccg cgtcttcgcg ctgcggccgc gtggg

```

<210> 256
 <211> 346
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (77)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (338)
 <223> a, t, c or g

```

<400> 256
agcttcagct gatactcgac cagccccact cgggccaata cgtgaatgtc tagcatcttc 60
acccggttcac gggctantcg agtagtagac attgattagc ctgaacgtac ctccgacgcc 120
agctgacgaa cgggtatgac ggatggattt cgtggtgtcg cgcccgaggt caattcgta 180
cggatgtatc tcggggccgg atcggggccg atgttggcgg ccgcggcgcc ctgggacgga 240
ctatccgacg aactggcggg ggcggcgctc tggtttgggt cggtgacctc gggcctggcg 300
gatgcggcgt ggcgcggccc gcggcggttg cgatggcncg cgcggt
346

```

<210> 257
 <211> 339
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (287)
 <223> a, t, c or g

```

<400> 257
ctggtcatgg acgttgctcc ggtagtggct cactgccgat cctcctcggt gagagtgcc 60
cctcaggggt gggtaggggt ggggtactcg aaccaagtta cccaccagta acaccgtcaa 120
aatatatccg ttgcataggt caatgcaagt tgatgtgagc tacattgcac caactaacta 180
accaaccggt tgggttagcg gtgatcctgg ccgtgtcggt cctctcacct gcggtgatag 240
cgatcaaatt aagaatatgc ggagtctagg gcggcagcgc ctggcancgt agatcatcgg 300
ctcacgcgga tgcggcctct tggtagcgac atgcgcgcg
339

```

<210> 258
 <211> 182
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (78)
 <223> a, t, c or g

<400> 258

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```
ctcgtgagta gcacccctgt aatttgggat cggcaaaaag gcgaatcacc gcgtggccac 60
gacacgccgg gagggacnat ctggggcggc tagggcttct cgcgggaagg cccgaacgta 120
cggcggttca acacgtcgcg tcgccctccg accgcgaaca ttcggggatg gcagcaacct 180
gg                                                    182
```

<210> 259
 <211> 213
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (132)
 <223> a, t, c or g

```
<400> 259
ggatcaacta cgggccaacg gtgattcttg ggcgccgctg acgcgcgaac gacccagcga 60
cacattcagc agatggccag cgcgtgccgg gccacgatgt tggtgctcgg cggctactcc 120
catggtgcgg cncgtgatcg acatcgtcac cgccgcacca ctgccggcct cgggttcacg 180
cagccgttgc cgcccgcagc ggacgatcac atc                                213
```

<210> 260
 <211> 321
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (257)
 <223> a, t, c or g

```
<400> 260
aggaccgtca gcacggcgac gtgctactcg ccgagcagtg ggaatcgctc tgcagcaaac 60
cattactctg cgcgacgttc gagatgacct tctgaatgga cggatctacc tgccgcgcga 120
cgacctggac cgcgtatgcg tccgcctccg cctggacgac accggggcac tctatgacct 180
cgacggacgc ctgcggtac tgctgcggtt caccgcccgc gcccgcacgg tacgcgtcgg 240
gactgcgctg agtccancct cgacgccgta gcgctgctgc tgtgcggcca tgtctggcat 300
ctaccgccgt cgctcccttg a                                321
```

<210> 261
 <211> 334
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (311)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (316)
 <223> a, t, c or g

```
<400> 261
cgactctgtt ggccactgcg ggtcgatctt gcggccgccc cggtcgtgga acgcccaggt 60
caccggcgcg cgcaccgcgg tcagcgcgtc gttggccagc gtggtcacat ggaagtggc 120
gacgacgagc ttggcgttgg gcagcagccc gggcgtcgcg atcgccgagg cgtatgcagc 180
ggcggggctc atggccaccg tactggatgc tctcccggaa ctgcggtgtg cgcgcttgca 240
gccatgccag caccgcccgc ccgccgcggc cttcatgctg cccataaacc ctgataccgg 300
```

ccaggtcgac naaccngtat cccacggtca accc 53941100 334

<210> 262
 <211> 208
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (208)
 <223> a, t, c or g

<400> 262
 cacacggacg gcggtgcgga cgcagctgac gcgcatgggtg gtcagcatcg cggccggtct 60
 gctgttgat gcctacttcg cgccgcgcaa atgctgggtg gcggcgggtg tggcgctcgc 120
 atggctgggc tgggtgctga cccaactctc gaaccacacc ggtgggtggg ctgggctatg 180
 gcctgccata tcggcctggt gttctacn 208

<210> 263
 <211> 233
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (38)
 <223> a, t, c or g

<400> 263
 ccgatatccg agccgatagc tggcgggctc ggggtggtngc cagcggcgct gcgacgaaag 60
 tgtgaccgtc atgaaacaga caccaccggc ggccgctcggc cgctcgtcacc tgctcgagat 120
 ctgagcatcc gcagccggtg tgatcgcgct ttcggcggtg agtgggtcgc cgcccgagcc 180
 cggcaaacgc cggccccgaca caaccccgga acaggaagtc cggtcaccgc gcc 233

<210> 264
 <211> 320
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (17)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (249)
 <223> a, t, c or g

<400> 264
 gcttcaggac aaattgnatc cctatgcacc cgttgtcacg ccgatgagtg aagactgcac 60
 gcaatcgccg gaatccggca aaaccctgca caagcgaaat caaccggagg ctgacaaggc 120
 aacgtcgggtg atccgtaccg cctgggttggg caaacggcag aaggcgccctc gtccggtcca 180
 tctacgccga gcacactggt gatagcgcca tcggcatcgg tgcggccacg gtggagacga 240
 acgtccgcng gcgtctgggt cagtaacccg ccgaccagtt ctcgggcaag ctggtcaaca 300
 tcgggcgcca cgtctccaac 320

<210> 265
 <211> 304

<212> DNA

<213> Mycobacterium tuberculosis

<400> 265

```

gtttggcggc cttattgcac tgaggctcgtc aattgaccca cagcggaaat gccgactatt 60
cgcaggcctc cttcgccttg gctgccggag atgggctccg cgggaaccgc atgcaggat 120
atgacctcgg tttctcgggt gctaccgctg gccttgctga ggatgaactc ggcgttggaa 180
ttgtccagcc ggccaattc atcgagcgca gattcgtaca catggccggc ggcgacatac 240
cttcaccgtg gatctgctcc acacggaccg ccctgtcggg atctgctcac gggtaaagga 300
atta                                     304

```

<210> 266

<211> 217

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (139)..(140)

<223> a, t, c or g

<400> 266

```

gcgcactcct cttatcgtc ccgctctgca tcgtcgcggc gcggtcaggc gcaaaccgcct 60
tcgggggtgg gggcctcgc gagcacaccg gatacggagc gcaacgcgtc gcgttggtgcg 120
ggcaaaacaag tgtgcaggnn ccaatgccat gtccagcagc ttatcagtgt cgaacgtgcg 180
aacgtcgcgc cttcgccggg gcctgaatct ctacaag                217

```

<210> 267

<211> 174

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (152)

<223> a, t, c or g

<400> 267

```

cgctgaaaagc caccattcgc gggtcgggag ccgggctcgg gccgccaggc tgctccgctc 60
ggatgatggca cgccaccgcg acaccacccg gctgcgctac gtcgagccat accgggagga 120
gctacatcgg ctcggccgcc tagtggtcgg gncctctttc gaggtcgagg tcga          174

```

<210> 268

<211> 144

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (28)

<223> a, t, c or g

<400> 268

```

tgtaatttgg gatgggcaaa aagcaaanca ccgcgtggcc acaaacgcgg ggagggacaa 60
tctcgggagg ctagggtctc tcgcgggaag cccgaaacgt acggcggttc aacacgtcgc 120
gtcgccctcc acgcgaaatt cggg

```

<210> 269

<211> 216

53941100

<212> DNA

<213> Mycobacterium tuberculosis

<400> 269

```
cttgggcaac atgctgagga tcgccttttc accacgcggt cgggggtggcg ttgcattagc 60
tcaccgatgg tgcgcttggt gcaggccgcc gggatacccg agtgccggta aaccatcttg 120
tgctgcagtt tgtcccgtg atggcgacct tgtcgcgttg atcacgatga cgaagtcacc 180
gccatcgaca ttgggggcga actcggcttg tgcttg 216
```

<210> 270

<211> 199

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (191)

<223> a, t, c or g

<400> 270

```
gcattgcttca ttatctaatt tccagccgtg gtttaattcag acgatcgaaa attcatgcag 60
acgggtcccaa atagaaagac attctccagg caccagttga agaggttgat caatggctctg 120
ttcaaaaaca agttctcatc cggaattgaac ttaccaaact tcatccggtt catgtacaac 180
atttttagaa ncatgcttc 199
```

<210> 271

<211> 230

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (187)

<223> a, t, c or g

<400> 271

```
atactcaagc ttgatgccgc cgaaaccgag cgtgagcacg ccgccagcca ccacgcgcgg 60
gtcggggcgc gggcccgggc cgccaggctg ctccgctcgg tgatggcacg ccaccgcgac 120
accaccgggc tgcgctacgt ctatccatac cgggcgggagc tacatcggct cggccgcca 180
ttgttcnggc cctctttcga ggtcgaggct tataccgatt tgcgcatccg 230
```

<210> 272

<211> 188

<212> DNA

<213> Mycobacterium tuberculosis

<400> 272

```
tccgtactgg tcgggtacgc ttcggtcgca gtgtgcgagt gatagatgac gaccgggacc 60
tcgtcggcat cttccatagc ccgccacacc ttcagttgct caccggaatc caaccggtag 120
aagggtcggcg agcgcctcggc attggtcatc gggatatgcc gctcgggacg gtcagaacct 180
cgggtccg 188
```

<210> 273

<211> 158

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (127)

<223> a, t, c or g

<400> 273

```

gttctcgcac gatttcggat tagcgggatg gtctcaattg ggtatgcggg gaaggcgctg 60
acattcgccg cgattagctg tttgatggac cgggggtgat ttttgatcac ggaaatgggt 120
gtttatncag gtcgcacgct ttcacccggg gcggaacg          158

```

<210> 274

<211> 237

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (83)

<223> a, t, c or g

<220>

<221> modified_base

<222> (181)

<223> a, t, c or g

<400> 274

```

gggtgtgcct gctgtgtatg cacggcatac ggacatcctt cccctgaaga cccgcggtcg 60
aacagccacg tgtccatcat canggggtca accccggcca agggcgacgg cacgccaagt 120
tcgccgaccg ttaacctagt gctgttagct tcatttgctg cgagcaaaac agctggtcgg 180
ncgttaggaa tgaattgaaa ctcaaccgat ttggtgccgc cgtaggtgtc ctggctg 237

```

<210> 275

<211> 262

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (21)

<223> a, t, c or g

<220>

<221> modified_base

<222> (39)

<223> a, t, c or g

<220>

<221> modified_base

<222> (97)

<223> a, t, c or g

<220>

<221> modified_base

<222> (122)

<223> a, t, c or g

<220>

<221> modified_base

<222> (130)

<223> a, t, c or g

<220>

<221> modified_base

<222> (144)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (222)..(223)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (225)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (229)
 <223> a, t, c or g

<400> 275
 actacccggc caacggtgat ntcttggccg ccgctgacng cgcgaaacgac gccagcgacc 60
 acattcagca gatggccagc gcgtgccggg ccacgangtt ggtgctcggc ggctactccc 120
 anggtgcggn cgtgatcgac atcntcaccg ccgcaccact gcccggcctc gggttcacca 180
 gccgttgccg cccgcagcgg acgatcacat cgcttttatt tnnntttcng gaatccctcg 240
 gccgcgctg gcgggctgat ga 262

<210> 276
 <211> 222
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (10)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (160)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (198)
 <223> a, t, c or g

<400> 276
 acgtcgggan actgttcgcg ttcatecctcg tctcggcgga ttggtctgct gcgccggacc 60
 gaccgatctt cagcgggggg tcacgctccg tgggggtgccg ttacttccga tcgcccagtg 120
 tgcgcgtgct gtggctgatg ctgaacctca ccgcgttgag ttggatcggt tcgggatctg 180
 gctggtggcc ggaacgcnat ttatgtcgct acgggcgccg gc 222

<210> 277
 <211> 166
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 277
 gctcaaaggc actactggca ccaaggccca cacgtcacct gtgactcctg cgccgacccg 60
 cccgaggtct ggccgttaca ccgaacgggc gagccgggag ttggtaccat cgaacaagac 120
 aagggtgcatg ggcgaggttg ttccgccact tcgtcgatga cggggtc 166

<210> 278
 <211> 330
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (268)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (273)
 <223> a, t, c or g

<400> 278
 cgataccggc tgcttaccga gacatccacc atgccacccg aatcaccgca cgcgccgaaa 60
 tcgcacaaca gcttgacgcc ttgcagggtc cgcgattgga attgccgacg gtctctgacg 120
 gcgtcgacct tggcagcctc tacgagctct cggaatcact tgcccagcag ggggttcgat 180
 gagtgtcaca ccgaagacct cgatatgggc gcaatcctgg ccgacacatc caaccgggtg 240
 gttgtgtgct gcggcgccgg tggggtcngc aanacactac cgcggccgcg ctggcgttgc 300
 gcgcggccga atatggccgc actgtggtcg 330

<210> 279
 <211> 332
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (169)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (213)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (227)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (230)
 <223> a, t, c or g

<400> 279
 cgtcgtcgtc gtggtatgcg atagccatcc cgtcgggcta ctcgccatca ccgatcagct 60
 tcgccccgaa gccgccgcgg cgatttccgc tgcgaccaa ctgaccgggg ccaaaccggt 120
 attgcttacc ggcgacaacc gggccaccgc cgatcggctc ggtgtacang ttggcatcga 180
 cgacgtacgg gccgggctac tgccgacgac aangtcgcag ccgtgcngcn gctgcaagct 240
 ggagggtcca gattgaccgt ggtcgggtgac ggatcaacg acctccggcc ttagcgggcc 300
 cgcgtgtcgc atcgccatgg gcagcggccc ac 332

<210> 280
 <211> 222
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (43)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (54)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (203)
 <223> a, t, c or g

<400> 280
 gcacgcaatc gaagtcaccc aaaccgggcg ggccaggcgt ctnacgccac gtcnaccagc 60
 cgcaacctca acccggccac ggcgagctcc tgatcaaggc cgaggccatc ggtgtctact 120
 tcatcgacac ctacttccgc tccgggcaat atccgcgcga actcccgttc gtcattctgct 180
 ccgaagtatg cggcacggtg gangccgtcg gccagggggtt ac 222

<210> 281
 <211> 184
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (140)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (143)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (172)
 <223> a, t, c or g

<400> 281
 tcgactgtgt ggccacagat cacgccccgc atgccgagca cgagaaatgc gtcgaattcg 60
 ccgcggggccg gccggcatgc tcgggttgca gacggcattg tcggtggtgg tgcatacaat 120
 ggtggcgccg gcttgttgan ttnggcgcga tatcgcgcggtg gtgatgagtg anaaccggcg 180
 tgca 184

<210> 282
 <211> 409
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (46)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (137)

<223> a, t, c or g

<220>

<221> modified_base

<222> (144)

<223> a, t, c or g

<220>

<221> modified_base

<222> (375)

<223> a, t, c or g

<220>

<221> modified_base

<222> (409)

<223> a, t, c or g

<400> 282

gaacctgaca	ccctgggtcac	gggtgagcac	ggacttgatt	tcttcnctat	tggtcggcgc	60
tggttgagcac	accacgccgc	tgacggccgt	cgcgctcctcg	ctgtgctcgg	tctgggtggag	120
cgcgctgccc	gcggccnaac	atcntaaatc	aagcgtattc	gtcaacagat	atcatcaatg	180
tcggcgctgg	actattcaaa	tcatcgatat	actggtgacc	tggtccttcg	ccatcgatca	240
atggcgatag	tcacgcaa	cgtcacggac	atcgctcgcg	tcccagctgg	cccgtgccaa	300
cagatgctgc	aacccatcgg	ggtgggtatca	ccgcggtgct	cggcgatggt	ccacaattct	360
tgcggtccaa	gcccnaaaca	tcccgggcat	gaattcaccg	gcatgcgcn		409

<210> 283

<211> 413

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (77)

<223> a, t, c or g

<220>

<221> modified_base

<222> (322)

<223> a, t, c or g

<400> 283

ctatcgtaacc	cgcgccggtc	accttctgga	tatcgccggc	ctgggtcaagg	gggcgtccga	60
gggagccggg	ctgggtnaca	agttcctggc	tcatatccgc	gaatgcgacg	ccatttgtca	120
ggtggtgcgg	gtgttcgtcg	acgacgacgt	gactcatgtc	accggacggg	tcgatcccca	180
gtccgacatt	gaggtcgtcg	agaccgagct	gatcctggca	gatctgcaaa	ccctggagcg	240
ggccacgggc	cggctggaga	atgaagcgcg	caccaacaag	gcgcgcaagc	cgggtctacga	300
agcggcactg	cgtagccagc	angtgctcga	cgccgggcaa	gacgctgttc	gccgcggggg	360
tggaatgccgc	cgcgttgcg	gactgaaact	gctgaccacc	aagcccttcc	tgt	413

<210> 284

<211> 283

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (216)

<223> a, t, c or g

<400> 284

53941100

tactcaagct	tcaggccgcc	acgtccgccg	tccgtcggcg	acgtgacctc	gagcgccgag	60
ttcgactcga	catcgccgcc	ggcgcatgcc	gacatgaacg	cggcactcac	cgcaagcccg	120
tcggagctca	ggtcgatcga	ctccgcttca	agcaccggat	cgcccgggca	actcgcggcc	180
tcggcctgtg	cgaacggcac	acccgtcgtg	gcggcncccc	gcgcggaact	gggtcatca	240
cggtcgttgc	gagccggtcg	cgtcaccgcg	taccgacgcc	gtc		283

<210> 285
 <211> 397
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 285						
ccgacatcga	gtgggctcgc	agtgacttgg	cgacctccaa	gccaccggta	cccgccgcgc	60
ggcaagccaa	ggacgacgac	ggccttgccg	gatatctgcg	ccaggcggtg	cgccaactgg	120
cgtccagcgt	cgccacgacg	gtcaaagagc	ttcatctgcc	gagtgtgtcg	ccatctcatg	180
gctccaaata	tgggaattagg	tccctggggc	gactgacgac	agtccctcag	cgaccggatt	240
gcgcatcccc	ccttgtagcg	tactccgcaa	atcccgggct	tgcgtccgcg	gaagcgaact	300
cggcggcgct	acgtggtggt	tcacttcggc	cggtgcgact	cggatcgacg	ggccgatggt	360
ggccggggccc	gcgcgcttct	tggatcatccg	attgagt			397

<210> 286
 <211> 342
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 286						
atactcaagc	ttgtcgcggt	aaaccgcacg	cagggcggtg	ggtgcggtgt	caaagacacc	60
cacacttctt	tgcgggttcg	tgatctcgac	accggccgcg	agccgaccac	catgcgcgcg	120
tagatcggcg	atcagcgcgt	cggctatcgc	ctgggtgccc	cccaccggaa	tcggccagcc	180
gaccgaatgg	gccagcggtg	ccagcatcag	tccggcgccg	gccgacacca	gtgacggcaa	240
cggtgaaatc	gcgtggggcg	caacgcccgt	gaacaacgcg	cgggcatcct	cgcccgcgca	300
cgaccgccag	gcagggtgcc	tgggccatca	tccgcagccc	ga		342

<210> 287
 <211> 430
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 287						
tggactcata	acgatcgggt	cagcgacgcg	ccaacacgaa	cggccggacg	agtggggccag	60
ggtcgcgcct	cccctacaaa	caggatccgt	tgcctgcgag	cgacaggctc	cggtgcggcg	120
ttgggcgccc	tgctcgtccc	agcgtccggt	cccgggtcgc	cggcgacgct	tgtttcctcc	180
atactcgccc	cctaattctg	aggcagcccg	taccgcgagg	caacctccca	aaaatgcaat	240
cccccaaaat	gcaatgcgtc	gagctatttc	tcacaccgac	cgctagtgtg	ggatcagaaa	300
tccgttgggc	gcggaagtcc	agccgaattt	gttctcccgc	tccgcatcat	gcttgtaatc	360
gtttggaaat	catcctcata	tgcttcgacg	gcttcatagg	tcaagcccaa	acccggcagg	420
atgggtggcc						430

<210> 288
 <211> 473
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 288						
ctttacactt	tatgcttccg	gctcgtatgt	tgtgtggaat	tgtgagcgga	taacaatttc	60
acacaggaaa	cagctatgac	catgattacg	ccaagctatt	taggtgacac	tatagaatac	120
tcaagcttag	tggttgcgca	cgtaaatctg	tcaggtgacc	gatccccctg	tgtctcactc	180
gcctcacagc	gaccaccacg	gctggcgctc	aaggcgggca	cgtgcggagc	agatgaggaa	240
tgtgcgacgt	cttgatgcag	cctgtcagaa	caccgagacc	ctcgacgaac	ttacgatcga	300

53941100

```
aaccgcttag gccaacccggt gacgggggtg tctttccgcg gctagggcgc cttatcgccc 360
gaaggccgtg ggtggtgatc gccttctggg tcgcgcttgc gggctgtgct gcgccgacgg 420
tgccgtccct ggaccgatct cccagcggca tccagtggcg attctgcat cg 473
```

<210> 289
 <211> 418
 <212> DNA
 <213> Mycobacterium tuberculosis

```
<400> 289
caggcatgca agcttgcat gtatcaacac gccgttgccg agcgtgagcc gatagttgac 60
atccggctcg gtgaaggatg aatcgatggc caggctcagg tcccatgccc gtgggccatt 120
gatgctgatc gccaggacgt caaagatttg gtccggcgct agctgggcca aaaacgtggg 180
cgccgggact tgcccggagc tgcccggggt cccgtcgcgc agctcggcgg ccccggtcag 240
aaagaaaatt cgccaggatc cacactccgc gccgtaggcc agctgtcca cggtgtcggc 300
atatagcccg cgggcccgcg cgtgctcgtc gtcggcgaac accgcatggt cgagaagcgt 360
tgccgcccac cggaatcac tgcgtcaaac cttcgccggg ccactccagc actccgtc 418
```

<210> 290
 <211> 194
 <212> DNA
 <213> Mycobacterium tuberculosis

```
<400> 290
atactcaagc ttgaccgacg ctgatcgac cgacgcggg aacctcaagg gcactactgg 60
cacaagggcc cacacgtcaa cctgttaact cctgcgccga ccccgccga agtccttggc 120
gttaacaccg aacgggcca cccgggaatt tgggttccat caaaacaaat agcaggtgcc 180
tggcgcgagt gttc 194
```

<210> 291
 <211> 166
 <212> DNA
 <213> Mycobacterium tuberculosis

```
<400> 291
gtcgtcgtgt gctggggcgt ccgtatcagc acgcccacga aatggggcac aagaaggatt 60
cctggaacgg tggctgtcca agatcacctt cgcccaaac tgctacgggc acttctacat 120
cgagcacaac cgtggccatc acgtccgcgg tgtccacacc gggagg 166
```

<210> 292
 <211> 291
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (288)
 <223> a, t, c or g

```
<400> 292
atatgccttg ctgagctttt cggatcgac cgagtcgtac ccgcgccggt caccttcgtg 60
gatatcgccg gcctggtcaa gggggcgctc gagggagccg ggctgggtaa caagttcctg 120
gctcatatcc gcgaatgcga cgccatttgt cagggtggtc ggggtgttcgt cgacaacgac 180
gtgactcatg tcaccggacg ggtcgatccc cagtccgaca ttgaggtcgt cgagaccgag 240
ctgatcctgg cagatctgca agccctggag cgggccacgg ggcggctnga a 291
```

<210> 293
 <211> 442

53941100

<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (323)
<223> a, t, c or g

<400> 293
gacaccctgg tcacgggtga gcaggactcg atttcttcgc tattgggtcgg cgctgttgag 60
gcacagcacg ccgctgaggc cgtcgcgtcc tcgctgtgct cggctctggg gagcgcgctg 120
cccgcggccg aacatcgtaa atcaagcgta ttcgtcaaca gatatcatca atgtcggcgc 180
tggactattc aaatcatcga tatactgggtg acctgggtcct tcgccatcga tcaatggcga 240
tagtcacgca gatcgtcacg gacatcgtct gcgtcccagc tggcccgtgc caacagatgc 300
tgcaacccat cgggggtgga tcnccgcggt gctcggcgat ggtccaacaa ttcttgcggt 360
ccaagcccga aaccatccgg ccatgagttc accggcatgg cgcaacggct ggtgcccggc 420
aaaacgcggc gcgatcgaat tc 442

<210> 294
<211> 150
<212> DNA
<213> Mycobacterium tuberculosis

<400> 294
tgtagaagggt ggggtcccgtc caacttcgcg gcggcggcgc gatatgcctt gctgggtcttg 60
ctcatttgat atccaatcta tgggtcgtgg ttactcaacg ggccgaagct ggccctccca 120
cgggtagggt cctattcgac ggtgatgtcc 150

<210> 295
<211> 321
<212> DNA
<213> Mycobacterium tuberculosis

<400> 295
cccgaatccg gtggccggca gggggcctgg cgacgtggac accttctaac ttgtctttac 60
cggtcactgt tgcaccccaa cacctttaac gacgtggacg gacgttacat cggattcgac 120
gggtgcatcc acagcgttgc cattggggcac acccactacg ccaatttctc cgactgggac 180
acctaccgca gcctcgcccc actgcaggga ctgttggttc cgcaacgggc catcgacatg 240
atccagtcgt tggtgaccga cgcggagcag actggtgcgt atccgcgttg ggcgctggcg 300
aaattccgcc accggcatga t 321

<210> 296
<211> 184
<212> DNA
<213> Mycobacterium tuberculosis

<400> 296
ttgagatgct ggtcgggatg ccgatgggtg gaacatggtc ccctggcgtc gaatacgcgc 60
gagcgcata gctcaccggt tcggaacaac gtatcgaaga actcgcactg ctggcagatg 120
gtatctccga tgtggttgta atttgtatcc caactctaac tgtgctatcg gatctgcgtg 180
aata 184

<210> 297
<211> 259
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base

<222> (225)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (227)
 <223> a, t, c or g

<400> 297
 cgtaatcacg atccccgctga gacacttgac cttacggccg aagtgacttc gctgctgcta 60
 tgccgacacc cgatttccat acgctgctgt acacgacggc cgggccggtg gcctccatca 120
 cgctcaaccg cccggaacag ctcaacacca tcgtcccgcg catgcccgcg gagatcgagg 180
 ccgctatcgg gttggtcgaa cgcgaccagg acatcaaggt catcntnctg cgcggtggcg 240
 ggcgcgcctt ctccggcg 259

<210> 298
 <211> 369
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (296)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (324)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (334)
 <223> a, t, c or g

<400> 298
 caagcttaag ctggttccgg ccactccatg agccgtagtg caatgggttcg tgcacggcga 60
 ggccgaactt gccataaaca tccctgacga aagtctccgg caagccgatt gcttcttcgg 120
 gccgcttctt gtggattgtc cgataaccgg gtccctcatg ctggaagttg tgcgcactct 180
 ttccttccgc gatgtgggct aacgactcgt cattgagcaa gaagtacgtg cacaggcatc 240
 gtccgcccggg cttcagcacg cgggagatct cgtccagata gtgctccacg tccggnggga 300
 aacatgtggg tgaacaccga ggttnagaaac accncatcca acgacgcacg cgggatatgg 360
 aaagcga 369

<210> 299
 <211> 387
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 299
 tatggtcttc gtcgaccagt acgtcgtagg cgccatgagc cagcgactga agccgcgcca 60
 tgcttgacag gccgctcat ccagcgaggc ggccatctcc cgcagatagc ctgccgcctc 120
 ggcgcgacg ctgtccggat cgcgtccgag ctgcgtcggc agcgacgca gccgctcgtc 180
 ataccatcgg gcatccagca gttgggtaac ctcaacgggg tcggtcgcta gcggcgctcat 240
 tgattcagca acaataaccga tgcgctgcag caactttcgc agtccgatgc ggccacctc 300
 ccgtgcagtc actggctagc ccccgtcatg ccggttggtg cgatggcacg gcagcgggct 360
 cgtaaacctg cggcttcagc tcgctgg 387

<210> 300
 <211> 73

53941100

<212> DNA
<213> Mycobacterium tuberculosis

<400> 300
gcttagcggt cttgctcgaa ccgacattgc gtgccactca tgagcgggtg gcggtcgcgg 60
tgcttacaca tct 73

<210> 301
<211> 156
<212> DNA
<213> Mycobacterium tuberculosis

<400> 301
gtatctggcg cctctcgaat atccttgaac gtcccgcggt gccacccaga tagatcgag 60
cgccctgcaa tggagttccc tttatggcct ctctagcctc ccgcttgatc ggctcgaccc 120
gagagatgcc ctcgggcggt gcgggatctc cctcca 156

<210> 302
<211> 394
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (341)
<223> a, t, c or g

<220>
<221> modified_base
<222> (347)
<223> a, t, c or g

<220>
<221> modified_base
<222> (349)
<223> a, t, c or g

<220>
<221> modified_base
<222> (361)
<223> a, t, c or g

<400> 302
cttcacgccg atccgcgacc gcgaacgcga cggtagcggg gggcgacaag gttcgggttg 60
tcgccgcggc gctgggcgat atcagctcac ccggtttcga ggtgttcggc gaccggacgg 120
tgctgcagac attcttgagc gtcctcgacc ggcccgattc ggccttcaac atcgtgacgc 180
cgtatttcgg cggtagcgct cggcgccgag tcgaaggcgg cctgagctaa agccgggcat 240
tgcgcgagtg gtaaacaagt tcggtgactt cgggtgaccg actcgacggg ctcgatctgg 300
gcgcgctgga ccggtatctg cggtcgctgg ggatcgggcc naccgcnant tgcgttgcca 360
nctgattccg gtggagctcc aatctgactt ccgg 394

<210> 303
<211> 404
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (106)
<223> a, t, c or g

53941100

<220>
<221> modified_base
<222> (170)
<223> a, t, c or g

<220>
<221> modified_base
<222> (298)
<223> a, t, c or g

<220>
<221> modified_base
<222> (304)
<223> a, t, c or g

<220>
<221> modified_base
<222> (346)
<223> a, t, c or g

<220>
<221> modified_base
<222> (373)
<223> a, t, c or g

<220>
<221> modified_base
<222> (401)
<223> a, t, c or g

<400> 303
gcagctaccg accctagcga cgagtgtgtt cgcagcgtcg aatgtgaacg ttcggcgtga 60
ttcggcgcg cgggttccgc tctcagcgca cgttcggcg cgaggnggct agtccctgg 120
taagcaatgt ctccggtcgcc gccagcagcg cgcattgtcg caaccgctcn accgcgttgc 180
gcatgtccgg taccgacgga aacgacggcg cgatccggat gttcttgtcg tccggatcct 240
ttcgatacgg gaacgacccc ccgcctcgg caccgcgata ccaacgtcct tagccaangc 300
tacngtccgg cgcgcggtcc cgggcaaac gtcgaagctg atgaantaac cacccttggg 360
ctcgggtcaa gangcgatct tggactcctt aaccgctgat ncaa 404

<210> 304
<211> 479
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (262)
<223> a, t, c or g

<220>
<221> modified_base
<222> (398)
<223> a, t, c or g

<400> 304
tccccatcgg cgccggaccg tttgaaagtc caagcacggg tgggatggaa tcgacgacag 60
ttgagcgccg tcggtggccg tggtcagcag ctgttcgcga acgcaccagg tcacatccct 120
tcgacatctc accgacgtgg cacgggcgac atcaacagga agattgacga atccctcgca 180
ggcgcggcac gtccgcaggc caacgccaac tacggggcca ccagcgatcc tccgctcacg 240
caccagccca agccaggctc anccacccaa gtcggccccg gctctccctc gccccctgg 300
ctccggggcc ttgttaaaca actaccggaa gtccaccaat cctcgctgca tctcgacacc 360

53941100

gtccgcctca ctcccttcct cccgccccctc tccacacnac acacctcttg cattaagggtc 420
acggagcggt cacttttcgt cggacgaaat tcgcaatccg gccgctcgcc gccagagat 479

<210> 305
<211> 260
<212> DNA
<213> Mycobacterium tuberculosis

<400> 305
cggaaagtgg atactcccag caggtagcag gtcgccacca cgctgggtcag tgcgcgttca 60
gctcgcttgc ggcgctgcag cagccagtcc gggaaatagc tgccctggcg cagcttgggg 120
atcgcgacgt cgatggttgc ggcacgggtg tcgcaaatca cgggtggcggg agccggttgcg 180
ctgattggac cgctcatcgc tgcgttcgcg gtagcccgcc ccgcacaggg cgtcggcttc 240
agcccccattc aaggcggcga 260

<210> 306
<211> 464
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (38)
<223> a, t, c or g

<220>
<221> modified_base
<222> (102)
<223> a, t, c or g

<220>
<221> modified_base
<222> (270)
<223> a, t, c or g

<220>
<221> modified_base
<222> (383)
<223> a, t, c or g

<220>
<221> modified_base
<222> (456)
<223> a, t, c or g

<400> 306
ggccgagtcc agcacttcgc actatgtgca gaccaaana cccggtgggtcg ccgcgctgcg 60
gcagcgggctg gcaacggcgc cggatgatcac cgagtgggtg gnagttgccg accggcagtt 120
cgccgcggggc ttactacgag aagggcctgc gcgacgtcat caggtatcac gtgtcgatga 180
cgtcgagcgt taacttcccc gaccagacgg cgacctcgcc gatggacccc gcgttgtacc 240
tggtgtggggc gcaagctaac gccgccgcan gctatcggta ctcggtcgaa gcgcagccgg 300
ggtcgcaagc gctagcgggc aaggtcgcca cgatctcggt cacctggacc aactacggcg 360
ctgctgcccgc caccgaatag tngtgccccg gctaccggct ggtggattcc acgggacatg 420
tggttcggac ctgccggcag cggtggaact gaagangctg gtct 464

<210> 307
<211> 315
<212> DNA
<213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (286)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (315)
 <223> a, t, c or g

<400> 307
 agcttcaagg acatcgtcat cgcgaccaa accgcgagct aggtcggcat ccgggaagca 60
 tcgcgacacc gtggcgccga gcgccgctgc cggcaggccg attaggcggg cagattagcc 120
 cgccgcggct cccggctccg attacggcgc cccgaatggc gtcaccggct ggtaaccacg 180
 cttgcgcgcc tgggcggcgg cctgccggat caggtggtat atgccgacaa agcctgcgtg 240
 atcggtcata accaacggtg acagcagccg gttgtgcacc atcgcnacg ccaccccggt 300
 ctccgggtct gtcan 315

<210> 308
 <211> 331
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 308
 gctcgcggtc cagcagcaga cgtgtctgac cccgacgccc ggccgcccgt accgaaaccg 60
 gatcggtccc ccatggtccg cggccacggc gtctgcctta cccggcccgg ataccagcag 120
 ccacacctcg cgggaacgct gaatcgccgg caggggtcaag gtgattcggc gtggcggcgg 180
 ttctcgcaat cgtccaccgc caccaccatg cgggtgctct cgaagacgcg gggctgtgcg 240
 ggaacagcga gttaatgtgg ccctcggggc ccatgcccag caggtggacg tcgaaattcg 300
 gcccggtca cctggtgcgg cactggcggc c 331

<210> 309
 <211> 286
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (109)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (268)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (284)
 <223> a, t, c or g

<400> 309
 agcttgtcga tcgtccggca gcgtccggcg agtcaagtcg aagccagtcg ggtctcctct 60
 ccgactacgg ccaagaactg ggcgacgggt tcagtgcata ccagcggana ctggtggcgc 120
 cctaggcgag cgaccgcctc acaaacggcg gtgaccgcgt tctggtcgtg caccatcgag 180
 ccgtgcccac cccggccgcg tgccgtcagc cgcattccact ggatgccctt ctcggcggtt 240
 tcaatcaggt acaggcgacg ttcgccanca tcgtgccggg gcangg 286

<210> 310
 <211> 331

53941100

<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (14)
<223> a, t, c or g

<220>
<221> modified_base
<222> (210)
<223> a, t, c or g

<400> 310
ttggtgatca tcgncccaac gacccccgagg cgatgttctt gcacaccgag gagtgtcgca 60
agctggggct ggccttcgcc gccgatccgt ctcagcagct ggcgaagctg tcggggtgag 120
gaaattcgca ggctcgtcaa cggtgctgct tacttgttca ccaacgacta ctaatgggat 180
ctgctgctgt ccaagaccgg ctggtcagan gccgatgtga tggcgagat cgacctgcgg 240
gtgaccacat tgggtcctaa ggggtgcgat ttggtagaac ctgacgcacc accatccacg 300
tcggcgttgg tccccgaaac agccagaccg a 331

<210> 311
<211> 458
<212> DNA
<213> Mycobacterium tuberculosis

<400> 311
ggctcgtatg ttgtgtggaa ttgtgagcgg ataacaattt cacacaggaa acagctatga 60
ccatgattac gccaaagctat ttaggtgaca ctatagaata ctcaagcttg attttgatca 120
tcatgatgat catcaccgga agtggtgtag ccgcagtggt tatcgtgggt accgtcgtgc 180
tttccatggg cgcctcttcc gggctttccg tattggtctg gcaggacatt ctgggtatcg 240
agttgtactg gatggtgttg gcgatgtcgg tgatcctgct cctggcggtg ggatccgact 300
acaatctgct gctgatttcc cggttgaaag aggaaattgg ggccggattg aacaccggaa 360
ttatccgtgc catggctggt accgggggag tggtgacggc tgccggcatg gtgttcgccg 420
ttaccatgct gttgtttgtg ttcagcgatt tgcgaatt 458

<210> 312
<211> 289
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (277)
<223> a, t, c or g

<400> 312
caggcatgca agcttggcgt gccgttccaa cccgaattgg ctttcggcgc catcgggtgag 60
gacggcgtgc ggggtgctcaa cgacgacgtc gtccgcggga cacacctga tgctgccgcc 120
atggacgcgg tcgaacgcaa gcagctgac gagctacaac gccgcgcgga acgcttccgc 180
cgcgggcgtg accgcatccc gttgaccggg cggatcgcg tgatcgtcga tgacggcatc 240
gccaccggag cgacggccaa ggcggcgtgc caggtcnccc gggcgcacg 289

<210> 313
<211> 154
<212> DNA
<213> Mycobacterium tuberculosis

<400> 313
ggcatcttgg ccgccatgtt agccacactg ccaccggcta tagaagcgat gcgcaccgtc 60

53941100
ctgccagcac attgcggcgc tcctccctgg aaagcaagat aaccaagctc atgccgtggg 120
tgtgggtggc gtggtttggt ttgggtaact ttgg 154

<210> 314
<211> 324
<212> DNA
<213> Mycobacterium tuberculosis

<400> 314
tcggctaata atcgtcgacg ccggcctcct ctgcaatcgc cttggcggtc gccggggtgt 60
caccggtgat catcacggtg cggatgctca ttcggcgcat ttcgtcgaat cgttcccgtg 120
tgcccacctt gacgatgtcc ttcagatgga cgacgccgat ggcccgcgcg ctgctgttat 180
cgggtccattc cgcaacgact aggggtgtcc cccgccggag ctgatgccgt cgacaatggc 240
acccacctcc tcggtggggt gggcaccgtg atcgcgaacc cacttcatca ccgcagccgc 300
ggcaccttgc ggattcgacg gatg 324

<210> 315
<211> 322
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (65)
<223> a, t, c or g

<220>
<221> modified_base
<222> (91)
<223> a, t, c or g

<220>
<221> modified_base
<222> (117)
<223> a, t, c or g

<220>
<221> modified_base
<222> (303)
<223> a, t, c or g

<220>
<221> modified_base
<222> (312)
<223> a, t, c or g

<400> 315
ctcaagcttg gaggcgtggc gatcgcggtc caaggcgcgc tctccgagca caacgagcga 60
agacngctcg gcgacggagc ctttatcgac ntccgttcgg gctggctgac ggcggnacaa 120
taatgctgga ctcgttggtg tcgacgggtg cgtggcgagc cgagcgccgt cagatgtacg 180
accgggtggg ctatgtgccg cggttggtga gtttccacga cctgaccatc gaagatccgc 240
cgcatccgct gctggcgcgg atgcgcccgt ggctcaacta attctacggc ggcgaactgg 300
gtnatccctt cnccaccgtc gg 322

<210> 316
<211> 404
<212> DNA
<213> Mycobacterium tuberculosis

<400> 316

53941100

cctaggtcaa	ccgtaccgtc	atcggatcgg	ggtcgaccgc	acagatggac	tggagcttcg	60
gcgaggtcat	cgcctatgcc	tcgcgggggg	tgacgctgac	cccgggtgac	gtgttcggct	120
ggggcacggt	gcccacctgc	acgctcgtcg	aagcacctca	ggccaccgga	aatcattccc	180
gggctggctg	cacgactgcg	acgtgggtcac	cctccagggtc	gaagggctgg	gcgagacgat	240
gcgaccgctc	cggacgagcg	gcactccttt	tccgttggct	cttcggccga	atccggacgc	300
cgaacccgac	cggcgcgggg	tcaacccggc	accgacgcgg	gtgccgttta	cccgcgggct	360
gcacaaatcc	cgacgggtat	gggctttgac	ctgccgacgg	ggga		404

<210> 317

<211> 346

<212> DNA

<213> Mycobacterium tuberculosis

<400> 317

agcttggcgt	gacaccaaca	cagggcactt	aagatggcaa	tgcgccgcct	acctgcacgt	60
tttcgcgatg	tcagaggatg	ccgaggggag	aacaatgcga	gcacggccgc	tgacgttgct	120
caccgcittg	gcggcgggtga	cattgggtggt	ggttgcgggc	tgcgaggccc	gagtctaggc	180
cgaagcatat	agcgcggccg	accgcatttc	gtctcgaccg	caagcgcgac	ctcagccgca	240
gccggtggag	ctactgctgc	gcgccatcac	gccgcctagg	gctccggcgg	cgtcgccgaa	300
cgtcgggttt	ggcgaactgc	ctacccgggt	ccggcaggca	accgat		346

<210> 318

<211> 333

<212> DNA

<213> Mycobacterium tuberculosis

<400> 318

tcatgccgtt	ggaccgacca	tcggagttag	ttgccgaacc	gcgggaccac	cgcaagcacc	60
cggctctggt	cgcgcaccgc	gtcggccaac	cgcttgagca	ccaccacgcc	gcagccctcg	120
ccgcgcacga	atccatccgc	gttggcgtcg	aagctgttgc	atcggccggt	cggtgacagc	180
gccgaccact	tggacagcgc	gatggcgggtg	aacggtgaca	aggtgagctg	caccccgccc	240
gccaatgcca	cgtcggtttc	acgcaggcga	agctctgaca	cgccaagtga	attgccacca	300
gcgacgacga	acaagcggtg	tctacggcga	tgg			333

<210> 319

<211> 207

<212> DNA

<213> Mycobacterium tuberculosis

<400> 319

gggtcgactt	tctgcaaggc	gaggctacac	cgtcgctcgtc	gtggtatgcg	atagccatcc	60
cgtcgggcta	ctcgccatca	ccgatcagct	tcgccccgaa	gccgccgtgg	tgatttcgcg	120
tgcgacaaa	ctgaacgggg	ccaaaccggt	attgcttacc	ggcgacaacc	gggccaccgc	180
cgatcggctc	ggtgttcagg	ttggcat				207

<210> 320

<211> 250

<212> DNA

<213> Mycobacterium tuberculosis

<400> 320

aatccgaaat	cctgaccgat	acttgaacct	ggtctcgttc	ggcaataact	cgtcggcgtg	60
caggacgcgg	cgcaaacgta	cttcggcatc	aacgcgtccg	acctgaattg	gcagcaagcg	120
gcgctgctgg	ccggcatggt	gcaatctaac	agcacgctct	tcccgtacac	caaccccgac	180
ggcgcgctgg	cccgggcgga	acgtggtcct	cgacaccatg	atcgaaaaac	cttcccgggg	240
aggcggatgc						250

<210> 321

<211> 365
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (18)
 <223> a, t, c or g

<400> 321
 ttccgaattt cgggtccngg tcatatgacc ctcatggaag aagaagcggc cgccccgcgc 60
 ccgtgcgacg gcgaatgaaa accctcaccc aggccgcatt gaacgccgac aagacgggtgg 120
 agcaggtcga agacgtcctg gacgggtctgg gtaagaccat ggccgagctg aacagctcgc 180
 tgtcacagct gaacagcacc gtggagcgc tggaggacgg tctggaccat ctggaaggta 240
 ccctgcacag cctggacgat ctgcgcgaaac ggctcatcgt gttgggtcgag ccggtggaag 300
 ccatcgtcga tcggatcgac tacatcgtga gcctcggcga aacggtgatg tcaccgctgt 360
 cggtc 365

<210> 322
 <211> 413
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (1)
 <223> a, t, c or g

<400> 322
 nctcgatctt ggggtacgtt cgatgaggct gctgaccaac aaccggcca agcgggtggg 60
 actggatgga tacggattgc acatcatcga gcgcgtgccg ctgccggtgc gggccaacgc 120
 ggaagaacat ccgttacctg atgaccaagc gtgacaaatt ggggcacgac ttggctgggt 180
 tggacgattt tcacgaatcc gtgcatctgc ccggagaatt cggcgggtgcc ttgtgaagg 240
 ggcgcgggg tgccggatct gccgtcgcgt gatcgtctgg tgtgcggctg gcgattgtcg 300
 ccagcagctg gcacggaaag atctgcgacg cgctgttggg cggcgcccg cagtgggccgc 360
 cgggtgtggc ctcatgacc gactgtgggt cgggtgctcc gcgcgatcga tat 413

<210> 323
 <211> 364
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (208)
 <223> a, t, c or g

<400> 323
 tcatcccgac caaacgcga gctaggtcgg catccgggaa gcatcgcgac accgtggcgc 60
 cgagcgcgct gccggcaggc cgattaggcg ggcattattat cccgccgcgg ctcccggctc 120
 cgagtacggc gccccgaatg gcgtcaccgg ctggtaaccg ctcttgcgcg cctgggcggc 180
 ggcctgccgg atcaggtggt agatgccnac aaagcctgcg tgatcgggtca tcaccaacgg 240
 tgacagcagc cggttgtgca ccaagcgcga acgccacccc ggtctccggg tctgtccaac 300
 cgatcgaccg cccaagccca catgaacaaa ccccggcatc acgttgccga tcggcatacc 360
 gtga 364

<210> 324
 <211> 488
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (312)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (425)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (449)
 <223> a, t, c or g

<400> 324
 ttggcgggtt ggcccagcag cccgccggtg acggcgacga tgctgggctg gttgcggccc 60
 tgcgccaccg cggcttgcat gctggttggc tgtcttgga cgatcccga atagtccacg 120
 cggatctggt gattttgcgg gctacccgcg attacccgc gcggctcgac gagtttttg 180
 cctggactac ccgcgtggcc aatctgctga actcgcggcc ggtggtggcc tggaatgtcg 240
 agcgcgttta cctacgtgac ctgatggatc ggggggtgcc gaccgtgcc ggcatgtgt 300
 atgtgccggg anagccggtc cggttgccac gcaaaggcca tgtcttcgtc ggtccgacca 360
 tcggtaccgg gacacggcgc tgtattgccc ggttcgctgc cgagttcgtc gcgcaactgc 420
 acgcnngcgg gccagcgggt ctcgttcanc ccggaggttc cggtgacgat gatcgtgttg 480
 gtctccct 488

<210> 325
 <211> 396
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (380)
 <223> a, t, c or g

<400> 325
 gtaggagaga acaaagaccg tcgataggac acgtgttacg ccggtagctg tcattggtat 60
 ggggtgccgc tgccgggggg catctactca cccgatcggg tgtgggaggc gttgctgcgg 120
 ggcgacaatc tggtcaccga gatccccgc gaccgctggg acatctacga gtactacgac 180
 cccgaaccgg gcgtgcccgg acgcaccgac tgcaaatggg gcgcgtacct cgataacgtc 240
 ggcgactttg atcccagatt cttcgggata ggggagaaaag aaacgatagc gatcgatccg 300
 cagcaccgct tgttgctgga aacctcctgg gaagccatgg aacacggcgg gctaacaccg 360
 aaccatatgc ctcccagacn gggttttcgt ggggtt 396

<210> 326
 <211> 394
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 326
 cgaactgagc ccatagaaag gcagcgacta attcgctggg caaataggaa gaccctttgt 60
 cctgccacgt atatttgcg acctcgttgc gaaggaagcg gctgcgattg gtgccctttt 120
 ccctggagaa tctctgcccg gagcaggaag tcttatgagt tgacaagcag gggcgccgcc 180
 ttcgccggaa atcacattct tgggtctctg aaatgagagc gctcccaggc cgccgatgct 240
 gccgagcgcc cgcccacgat acgacgccat cgcgcttgg gccgcgtctt cgaccaccgc 300
 caggttgttg tgcgtggcga tcttcatgat cggtccatc tcgcaggcca cccggcatag 360
 tgaacgggga ccatggcctc ggttcgcggg tgaa 394

<210> 327
 <211> 140
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 327
 cttagacgcc acctccgggc cgagctccac ggggtggata agtacggccg gatgtggccg 60
 caatgggaag ttgttgcccg cttgactgtc cgggttaacg ccggaattcca ccacatcccc 120
 ttgcgaaagg ccgttgggtt 140

<210> 328
 <211> 242
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 328
 gatcgcgatc gtcgatgtgg ccatccggct tggcgtcgac ccgcgtaagg cagaccagat 60
 gggttcgcggc acggtcaacc tgccacacgc actggtaaga ctgcccgcgt cgcggtattc 120
 gcggttgggtg aaaaggccga tgctgccgtt gccgcggggg ctgatgctgt cggatcgacg 180
 atctgatcga gaggatcagg gcggctggct ggaattcgat gccgcgatcg cgataaccgga 240
 tt 242

<210> 329
 <211> 220
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (22)
 <223> a, t, c or g

<400> 329
 agcttacgcc gctttcgctt cngatttggg acgccgcatac gaaagcgagc ttggaagcgc 60
 ggcgcccggc tggtcgagct gctcaagcag ccgcaatccc agcccatgcc cgttgaggag 120
 caagtgggtt cgatcttcct gggcaccggc ggtcacctgg actcgggtgcc cgtcaaggat 180
 gtcggcgggtt cgaaaccgaa ttactggacc acatgcgggc 220

<210> 330
 <211> 328
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (140)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (228)
 <223> a, t, c or g

<400> 330
 cgacgggacc tcgtcgcatac ttccatagcc cgccacacct tcagttgctc accggaatcc 60
 aaccgggtata aggtcggcga agcgctcggc attggatcatc gggatatgcc gctcgggacg 120
 gtcagatgcc ctcgggtccn gccagcactc ctcaggcttc gtcgggggtg tcgcgaccgc 180
 atggggccaca tcgcattcac caggctctgcg cgaatcacca gcacgtanac gggttccttc 240
 ctaagcaaca ccgaaatttc aggacccgaa tgctccggga aaacatgtca cggtaagtcc 300
 ggtattccgg gtaccggttg agcattga 328

<210> 331
 <211> 366
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (134)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (171)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (231)
 <223> a, t, c or g

<400> 331
 cggcacgcgt ttgggctgtc accagcagtt ggtagtctct cactactgtt gttcgagcgt 60
 cgagccgccc cgcggtgtcga ggtcgccgga cgcgtaaccg ccaggccggt caggggtgccc 120
 ttccagtcga cgngctgtg gtcggctaac cgcttatctt caatcgagac natcgccagc 180
 ttcatcgtgt tggcgatctt gtccgagggc acctcgaacc ggcgctgcga ntacagccac 240
 gcgatcgtgt tgcccttcgc gtcgaccatc gtcgataccg caggcacttg cccctcgagc 300
 agctgggccc atccgttggc aacgacctca gaggcacgat tggacatcag ccctagcccg 360
 cctgcg 366

<210> 332
 <211> 407
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (8)
 <223> a, t, c or g

<400> 332
 ccgtcgangc cgccgacttg gcttgaccga caccaacatg gcctgagggg gttcaacaag 60
 accgtggccc acgggctgaa catcaccatg agcggcatga gccacgccac cgagttcatc 120
 atgttgatcg ccgaaaacca ttggcgggta gcggaagaac ggtcgaggtg ctctacaccg 180
 agtattcgaa gtcgaaaggc caaccgctgc tcaacggcgt caacatcatt ttcgacgggt 240
 ttctgcgagg gaggatgcca cgatgaactg gatccagggt ctgttgatcg cgtcgatcat 300
 cgggttgctg ttctacctgt tgccgtcgcg ccgaagcgcg cggtccgtgc ctgggtcaag 360
 gtgggctatg tcttgttcgt gctcccggca tctatgccgt gctgaga 407

<210> 333
 <211> 473
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (8)
 <223> a, t, c or g

<220>

<221> modified_base
 <222> (187)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (244)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (282)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (292)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (312)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (410)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (434)
 <223> a, t, c or g

<400> 333
 ttacacgncc tgcttccggc tcgtatgttg tgtggaattg tgagcggata acaatttcac 60
 acaggaaaca gctatgacca tgattacgcc aagctattta ggtgacacta tagaatactc 120
 aagctttttg agcgtcgcgc ggggcagctt cgccggcaat tctactagcg agaagtctgg 180
 cccgatncgg atctgaccga agtcgctgcg gtgcagccca ccctcattgg cgatggcgcc 240
 gacnatggcg cctggaccga tcttgtgccg cttgccgacg gngacgcggt angtgggtaa 300
 gtccggtcta cncctgggcc tttgcggacg gtcccacgc tggtcgcggt tgcgccgcgg 360
 aaagcggcgg gtcgggtgcc atcaggaatg cctcaccgcc gcggcactgn acggccagtg 420
 ccgcggcgat gtcngccatc gggacatcat gctcgcgttc atactcctcg acc 473

<210> 334
 <211> 305
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 334
 caggcatgca agctttgtca caccaagtgt ttcgaccagg cgctccatcc ggcgagtgga 60
 tactcccagc aggttagcagg tcgccaccac gctggtcagt gcgcgttcag ctgcgttgcg 120
 gcgctgcagc agccagtccg ggaaatagct gccctggcgc agcttgggga tcgcgacgtc 180
 gatggttgcg gcacgggtgt cgaaatcacg gtggcggtag ccgttgcgct gattggaccg 240
 ctcacgcgtg cgttcgcggt agcccccccc gcacagggcg tcggcttcag ccccatcaa 300
 ggcgg 305

<210> 335
 <211> 432
 <212> DNA
 <213> Mycobacterium tuberculosis

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<220>
<221> modified_base
<222> (401)
<223> a, t, c or g

<400> 335
agcttagcca gtttttctac tcttgggcc acaccacag tgcttcgacg gtacggtcac 60
ccatgatggc catccagttg gcatcgggtg gctgataaat gccagctggt ttcgccaacc 120
cggtagcgat cttggcgcg cgttgttgt cactgatacc tatcgagcaa gacagcccgg 180
tttgcgacaa gatgactttt cggatctctt cggcgacttc gatggggtcg tcgggagtcc 240
cgggcgccac cgcgaggtaa gcctcgtccc agccccatac ctcgaccggg tatcccagg 300
cgcgcaataa cgccaccacc tcctcggacg ccgcgttgta ggcggctggg ttcgacggca 360
agaagtggcc tcagggcatc gtcggcgcg tcccaacggc ntgccggcg gcacaccgta 420
ggcgcggggc tc 432

<210> 336
<211> 429
<212> DNA
<213> Mycobacterium tuberculosis

<400> 336
ccggcggaac tcagacgtgc tgggtggtgc gcatggcacc gcgggcagca aagcgcactt 60
ctccggggac gacagcaagc gaccgctaga caagaggggt cgtgcgcagg cagaagcggt 120
ggtaccacag ctgctggcgt tcggcgccac cgatgtttat gccgccgacc ggggtgcgctg 180
ccaccagacg atggagccac tcgccgcgga actgaacgtg accatacaca acgagcccac 240
cctgaccgaa gagtcctacg ccaacaaccc caaacgcggc cgacaccgag tgctgcagat 300
cgtcgagcaa gtaggcacac ccgtgatctg cagcgagggc aagggtcatt ccgatctgat 360
cacgtggtgg tgcgagcgcg accgtgtgcc cccgacagtc ccgcaatcgc aaaggcagca 420
cgttgggtg 429

<210> 337
<211> 94
<212> DNA
<213> Mycobacterium tuberculosis

<400> 337
gtatggtcag ctgtccatcc ggcgctgtcg gccgagctgc cagatctcgt cagccgtaac 60
cgggttgccg gatccacgcg tgcgggtgtg ctac 94

<210> 338
<211> 351
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (336)
<223> a, t, c or g

<220>
<221> modified_base
<222> (342)
<223> a, t, c or g

<400> 338
ccgactttcc gcgggtaccc gctcaacttt gtgtcnacct caacgccatt gccggcacct 60
actacgtgca ctccaactac ttcattcctga cgccggaaca aattgacgca gcggttccgc 120
tgaccaatac ggtcgggtccc acgatgaccc agtactacat cattcgacg gagaacctgc 180
cgctgctaga gccactgcga tcggtgccga tcgtggggaa cccactggcg aacctgggtc 240

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aaccaaaactt gaaggtgatt gttaacctgg gctacgcgac ccggcctatg gttattcgac 300
ctcgccgccc aatgttgcca ctccgttcgg ttgttccaga angtcagccc g 351

<210> 339
<211> 152
<212> DNA
<213> Mycobacterium tuberculosis

<400> 339
gcaccgatgt cggcgagcac ttcgtcaact tccaggggtg cccgcaccaa gtatttcgac 60
gagtatttcc gtcggggccg cgccgccggg gcgcggcagg tggtcattct ggcggcgggg 120
ctgggactcg cgcgcgtaac ggctgcctcg gc 152

<210> 340
<211> 263
<212> DNA
<213> Mycobacterium tuberculosis

<400> 340
tgcacccaac ttactgagca tgctaacgct ggctcgtgcgg gtcttggtcc cgctgtgcgg 60
cagggcacac gtcggggcg tagctgggag agggcccggg caagcccga gagcagtgt 120
cagtcgcgca gcttgaccga ctttcgatga gaacgcgctt ctcgccgtat tgaactggcg 180
tgctgacggg cgctgagcag cgctcgccga gtgcggccgc tgattctttc atcgagccag 240
gacgcgcatt cgtgttcggc cgc 263

<210> 341
<211> 249
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (218)
<223> a, t, c or g

<220>
<221> modified_base
<222> (236)
<223> a, t, c or g

<400> 341
agcttacggc cggtcgacgc gacgagtggg tcatgacacc acaaaccgtc aacgcctact 60
acaacccggg gatgaacgaa atcgtcttcc cgcagcgatt ttacagccac catitttcga 120
tccgcaggcc gacgaggccg ccaactacgg cgggatcggg gcgcgtgatc gggcacgatg 180
atcgggcacg gtttcgacga tagggcgcca aatacgangg cgacgcaatc tggctcnattg 240
gtggatcga 249

<210> 342
<211> 269
<212> DNA
<213> Mycobacterium tuberculosis

<400> 342
atgtcgtcac gtcaccacaa tcgcgaggac ccaatcatgc cgcccagggc ggccaaccca 60
atggtggccg cgaagcggca gtcgatcgc agcgcggagg tgccggccgc cagttgattc 120
acgaacaggg tgaggtcata ggcgggcagg atagtacga acgcaagacc tatacttgcc 180
gtcggagtaa gaatcgagta gccggtcgac caacggaagc gaaagtgtcc gcgatgttga 240
tgagcgtcgc cggttgtggc ggcgggtggc 269

<210> 343
 <211> 336
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (30)
 <223> a, t, c or g

<400> 343
 agcttcacca gcgtagccgat gctgttcgcn acacctccct actatgcgca attcgccgac 60
 acgggtggca tcaacacggg cgataagggtg gacatcgctg gggtagaacgt cgggctgggtg 120
 cgctcgctgg caatccgcgg caaccgcgtg ttgatcggtg tctcgttgcc cggcaagaca 180
 atcgggatgc aaagccgggc agcaattcgc accgacacca ttcttggccg taagaacctg 240
 gaaatcgaac cccgcggttc ggagccgttg aaacccaacg gtttcctgcc gttggcgag 300
 aacactacgc cataccaaat ctatgacgcg ttcgctc 336

<210> 344
 <211> 417
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 344
 ctgccgcggt ggcggtcagc gcctggcaag tcaccgcacc gccgtccggt tcatcggcag 60
 gctccccga aaagggccct ggcaacagaa ggtgatcaat gagctccgc agaccttcgc 120
 cgatctggga ccgacatacg tgaagtccgg ccagatcatc gcgtccagcc cgggagcatt 180
 cggtagatcg ctgtcgcggg gaattccgcg gcctgctcga ccgggtgccg cccgcaaaaa 240
 ccgacgaggt gcacaagctc ttcgtcgagg aactcggcga cgagccggcc cggctgttcg 300
 cctccttcga ggaagaaccg ttcgcgtctg cgtccatcgc ccaagtgcac tacgcgacct 360
 gcgcagcggc gaagaagtgt ggtcaagatc cacggccggg catccgccgc cgcgttt 417

<210> 345
 <211> 405
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (334)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (360)
 <223> a, t, c or g

<400> 345
 gatcgtgccg gccccccggc ggtagtagca gatcagctcg tcgaaatcgc ggcaaccagt 60
 ccagtcgatt tccatacggg cgccgtcaat caactctgcg aacatcgcga tcggcaccgg 120
 aaaccggcga gccgcgtcag ccagcgcaac cagcaccggg atcggatgaa tcatcaatat 180
 tatcaagtga tttctgatg gcatcgagct cggtagatct ggtctcgggg gccagctcgc 240
 cgtaggcgac gtcgtcgatc cggcggccga gcgcatagac cgcaaatagt gccgctcgct 300
 tttcgcgcgg caagagtcgg atgccgtaat atangtttct ggaggccgtg cgcgtgacn 360
 actcgggtgat tcgatacgcc tgttcacatc ggtcatgccg tcctc 405

<210> 346
 <211> 414
 <212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (340)

<223> a, t, c or g

<220>

<221> modified_base

<222> (373)

<223> a, t, c or g

<400> 346

ggtggcgcaa	tgaccgaaac	caccccagcc	ccgcaaacc	cggcggcccc	ggccgggccc	60
gcacaatcgt	tcgtgttgga	gcggcccatc	cagaccgttg	ggcgccgtaa	ggaggccgtg	120
gtacgagtg	ggctggtgcc	cggcaccggc	aagttcgacc	tcaacggccg	cagcttgagg	180
gactacttcc	caaacaaggt	gcaccagcag	ttgatcaagg	cacccttgg	caccgtggat	240
cgggtggaaa	gtttcgacat	ctttgcccac	ctgggcggcg	gcggcccgtc	gggtcatggc	300
cggcgcgctg	cgctgggta	tcgcccgggc	attgattctn	gtatcgccgg	atgaccggcc	360
cgcgtgaat	aangccggct	tcttgaccgt	gatccacgcg	ccaccgaacg	caaa	414

<210> 347

<211> 331

<212> DNA

<213> Mycobacterium tuberculosis

<400> 347

cacaatagat	tactcaagct	tcgaaccagc	ggccttatca	cgtatccccg	ctgagacctt	60
gacccttagg	gccgaagtga	cttcgctgct	gctatgccga	cacccgattt	ccagacgctg	120
ctgttacacg	acggccgggc	cggtgggcac	catcacgctc	aaccgcccgg	aacagctcaa	180
caccatcgtc	ccgcccattg	ccgacgagat	cgaggccgct	atcgggttgg	ccgagcgcgga	240
ccaggacatc	aaggctcatg	tgctgcgcgg	tgccggccgc	gccttctccg	gcggttataa	300
cttcggcggc	gggttccaac	attgggggca	t			331

<210> 348

<211> 386

<212> DNA

<213> Mycobacterium tuberculosis

<400> 348

tcaggacgct	tatggttggc	agatggtcgc	cctggcgctg	aatacgcgcg	agcgcatgag	60
ctcaccgggt	cggaacaacg	tatcgaagaa	cgtcgcactg	ctggcagatg	gtatctccga	120
tgtggttgta	atttgtatcc	caactctaac	tgtgctatcg	gatcagcgtg	aatatcgaga	180
tattgcgaat	gcgatgacag	gccgccattc	ggtttattcg	cttacgcttc	ccgggttcga	240
ttcgtctgat	gactgcccgc	aaaacgcgga	tatgattgtt	gaaaccgtat	ctaacgcaat	300
tattgatgtg	gtaggcggca	gctgccgttt	tgtgctgtcg	ggctattcat	cgggtggggg	360
tgtttggtcta	tgccctctgc	tcccat				386

<210> 349

<211> 187

<212> DNA

<213> Mycobacterium tuberculosis

<400> 349

cgcagctgtc	gccgatctgg	tccggaatac	ctagctccag	gttctgagtg	gagatgagtg	60
cggccatcga	agtgttgta	atgtactcca	ggatgtcagg	tgccaggccg	ctggcgagga	120
tcttgggcac	cgccgccatg	acttggtcga	agtcggcgaa	cggggcgagc	acgctggcgt	180
cgtggtc						187

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<210> 350
<211> 241
<212> DNA
<213> Mycobacterium tuberculosis

<400> 350
gtagttcgtt catccaaaca cagtgcggtt ccggctcaag cggatcaccg acttcaccgg 60
gcgcgatccc acccagccac gcgatgccta tgtccttcgg gtggcggcca ccgtgggtca 120
actcaactat ccgacgccgc actgaagcat cgacagcaat gccgtgtcat agattccctc 180
gccggtcaga ggggggtccag caggggcccc ggaaaagata ccaggggcgc cgtcggaccg 240
a 241

<210> 351
<211> 335
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (296)
<223> a, t, c or g

<400> 351
tccgctcgct tctccgagag gttgagtgcc aacgctctgc cgatgcccga agccggcccc 60
ggtgatgacg gcgaccttgc cttcgaatga gctcatttga ctactccccg tggttgtccc 120
tgcgattggg ggaggtggcc gcgcagcctt gccccgaggt cggcgatcgc gtctcgggct 180
tcggggagca gactgacctg cagatggaag tcgtgccaca tgcccgcgaa ccggcgatgc 240
tcgatgcttg ttttcgaagc ggcgcaggcg gtttcgatct tgtccgcgtc aacacngatc 300
ggatcgctgc ccgcggtctg catgacgaat gggcg 335

<210> 352
<211> 441
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (425)
<223> a, t, c or g

<400> 352
atgggaggcc accgattacc atcttgacaca caccgattcc gggctattga tgtccacggt 60
cggtccgcga accgcgctgt ggctgctgct ggccaaaggc ggaggcgata ccgaagtcag 120
tgcccaagct tgggttccac gctcgcgcag ccacgccgtc acctttccac gagacctcac 180
ctgccgatcc gaaatggaat cggccgtgac ggaattggcg cagcgaacac tcaacgaggt 240
ggtggcttcg tcgcgaaccg tcacccgagt cgcggtcacc gtgcgcacgg cgacgttcta 300
caccgcacc aagatccgaa agctgcaagc tcccagcacc gatcccgacg tcatcaccgc 360
tgccgcccgg cacgttcttg aacctattcg agctggaatc ggccgtccgg ttgctgggaa 420
ttgcngttaa gaactgggcc t 441

<210> 353
<211> 332
<212> DNA
<213> Mycobacterium tuberculosis

<400> 353
gctttgcgcg cttctccgag aggttggagt gccaacgctc tgccgatgcc cgagccggcc 60
ccggtgatga cggcgacctt gccttcgaat gagctcattt gactactccc cgtggttgtc 120
cctgcgattg gtggagggtg ccgcgcagcc ttgccccgag gtcggcgatc gcgtcgcggg 180
cttcggggag caaactgacc tgcagatgga agtcgtgcca catgcccgcg aaccggcgat 240

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gctcgaatgct tggttttcgaa gcgggcgagg cggttcgata ttgtccgcgt caacgcagat 300
cgatcgtcg cccgcgggtc tgcataaga at 332

<210> 354
<211> 334
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (334)
<223> a, t, c or g

<400> 354
ctcacgcagc cacgccgtca cttttccacg aagacctcac ctgccgatcc gaaatggaat 60
cggccgtgac ggaaattggc gcagcgaaac actcaacgag gtggtggctt cgtcgcgaac 120
cgtaacccga gtcgcggtca ccgtgcgcac ggcgacgttc tacacccgca ccaacatccg 180
aaagctgcaa gctcccagca ccgatcccga cgtcatcacc gctgccgccc ggcacgttct 240
tgacctattc gagctggatc ggcccgtccg gttgctggga gtgcggtag aaactggcct 300
agaaaccggc gggcacaccg cacctgggag gggg 334

<210> 355
<211> 341
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (159)
<223> a, t, c or g

<220>
<221> modified_base
<222> (190)
<223> a, t, c or g

<220>
<221> modified_base
<222> (335)
<223> a, t, c or g

<400> 355
tgcttccggc tcgtatgttg tgtggaattg tgagcggata acaatttcac acaggaaaca 60
gctatgacca tgattacgcc aagctattta ggtgacacta tagaatactc aagcttgatg 120
ccgccgaaac cgagcgtgag cacgccgcca gccaccacnc gcgggtcggg cgccgggccc 180
gggtcgccan gctgctccgc tcggtgatgg cacgccaccg cgacaccacc cgggtgcgct 240
accgtcgagc ataccgggag gagctacatc ggctcggccg cccagtgttc gggccctctt 300
tcgaagtcga agtcgatacc gattgcgcat ccgcngccgc a 341

<210> 356
<211> 259
<212> DNA
<213> Mycobacterium tuberculosis

<400> 356
caggcatgca agcttcacgt ccgtacggct cgggtacgct tcggtcgcag tgtgagagtg 60
atagatgacg accgggacct cgtctgcatc ttccatagcc cgccacacct tcagttgctc 120
accgggaatcc aaccggtaga aggtcggcga gcgctcggca ttgggtcatcg ggatagtcg 180
ctcgggacgg tcagaaccct cgggtccggc cagcactccg caggcttcgt cgggggtggtc 240
gcgacgcgca tgggccacc 259

53941100

<210> 357
<211> 349
<212> DNA
<213> Mycobacterium tuberculosis

<400> 357
gcttgcttat cgtcccggcc aggtccggcc agtcaaggct gaaggccagt ccggtctcct 60
ctccgactac ggccaagaac tgggcgacgg tgtcagtgca gaccagcgga aactggtggc 120
gccctaggcg agcgaccgcc tcacaaacgg cggtagaccgc gttctggtcg tgcaccatcg 180
agccgtgccc agcccggccg cgtgcccgtca gccgcatcca ctggatgccc ttctcggcgg 240
tttcaatcag gtacaggcga cgttcgccac catcgtgccc gggcacgggt agcgagaaac 300
cgccgacttc acgattgcct cggtagatgcc gtcgaaacag atcgggcct 349

<210> 358
<211> 325
<212> DNA
<213> Mycobacterium tuberculosis

<400> 358
gcgcgccatg ttgaggttgt ccgacggtga cgacggtgaa ccacaactgt ttgacctgtc 60
cgcacacacc gtgtggatcg gcgagcggac ccgacaaatc gatggcgcgc acatcgcgtt 120
tgcccagggtg attgctaatac cggtcggggc caagtggggc cccaacatga ccccggaaact 180
ggccgtggag tacgtcgagc ggctcgaccc gcacaataag ccgggcccggc tgacttgggtg 240
agcaggatgg gcaaccacaa ggtccgcgat ctgttgccac cgatcgtgga gaacgtccat 300
gccaccgggc atcaggtcat ctggc 325

<210> 359
<211> 191
<212> DNA
<213> Mycobacterium tuberculosis

<400> 359
ttgccttcca tgccgagcaa ggtcgactca gcgatgacga attgttcttc ttcgcgggtg 60
ttgctgctgg ttgcgggcta tgagagcact gctcatatga ttagcacatt gtttctgacg 120
ctggccgact atccagatca gctgacactc cttgcgcagc aaccagacct gatcccgcgg 180
gcgatcgagg a 191

<210> 360
<211> 74
<212> DNA
<213> Mycobacterium tuberculosis

<400> 360
cgacgtggg cccaactgcg accaccaggc cctggtatgg caggacatgg ccgggttcag 60
cggcgccaat accg 74

<210> 361
<211> 312
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (33)
<223> a, t, c or g

<220>

<221> modified_base
 <222> (45)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (258)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (294)
 <223> a, t, c or g

<400> 361
 taacgactcg ggtccagcga ccgcgccaac acnaacggcc ggacnacgtg ggccagggtc 60
 gcggcctccc ctacaaacag gatccgttgc ctgcgaacga caggctccgg tgcggcggtg 120
 ggcgccgtgc tcgtcccagc gtccgggtccc gggtcgccgg cgacgcttgt ttcctccata 180
 ctgccccct aatctcgagg cagcccgtac ccgcaggcaa cctcccaaaa atgcaatccc 240
 ccaaaatgca atgcgtcnag ctatttctca caccgaccgc tagttgcgga tcanaaatcc 300
 gttgggcgcg ga 312

<210> 362
 <211> 335
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (2)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (221)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (318)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (328)
 <223> a, t, c or g

<400> 362
 cntggcggtg ggtgcggtgt cgaacacgac cacacttctt tgcggttcgg tgatctcgac 60
 accggccgcg agccgaccac catgcgcgcg tagatcggcg atcagcgcggt cggctatcgc 120
 ctgggtgccc cccaccggaa tcggccagcc gaccgaatgg gccagcggtg ccatcatcag 180
 tccggcgccg gccgacacca gtgacggcaa cgggtgaaatc ncgtgggccc caacgccggt 240
 gaacaacgcg cgggcatcct cgcccgccag cgaccgccag gcagggggtgc cctgggccag 300
 catccgcagc ccgagacnca ggaccgancc cagtg 335

<210> 363
 <211> 386
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>

<221> modified_base
 <222> (8)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (125)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (164)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (199)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (220)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (239)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (284)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (358)
 <223> a, t, c or g

<400> 363
 gcttttcnga tcgcagcgag tcgtacccgc gccgggtcacc ttcgtggata tcgccggcct 60
 ggtcaagggg gcgtccgagg gagccgggct gggtaacaag ttcctggctc atatccgcga 120
 atgcnacgcc atttgtcagg tgggtcggggt gttcgtcaac aacnacttga ctcatgtcac 180
 cggacggggtc gatccccant ccgacattga ggtcgtcgan accgagctga tcctggcana 240
 tctgcaaacc ctggagcggg ccacggggccg gctggagaag gaancgcgca ccaacaaggc 300
 gcgcaagccg gtctacgacg cggcactgcg tgcccagcag gtgctcgacg ccggcaanac 360
 gctgttcgcc gcgggggtgg atgccg 386

<210> 364
 <211> 386
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (14)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (166)
 <223> a, t, c or g

53941100

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<400> 364
gtcgtacgcc attngtcggt gtgcgcatac cagtacgacg cgccggggcac ctgacgcggc 60
ggccgcgacc agtcggtggc catcgccatc gtctgccacc cggccaacgg acgcaccttc 120
tcctggccga cgtagtgcgc ccacccgccg ccgttgcgtc ccatcnatcc ggtcaacatg 180
agcagcgcca acaccgagcg gtacatgaca tcgctgtgga accagtgaca gattccgccg 240
cccatgatga tcatcgaccg tcctccggat tcggtcgcgt tgcgggcgaa attccttggc 300
aaaccggatt gcctgcgcgg ccggcacacc ggtgatcgac tcctgccagg ccgggggtgtt 360
ctgctggggtt cggtcgtggt accggt 386
```

```
<210> 365
<211> 335
<212> DNA
<213> Mycobacterium tuberculosis
```

```
<220>
<221> modified_base
<222> (92)
<223> a, t, c or g
```

```
<220>
<221> modified_base
<222> (102)
<223> a, t, c or g
```

```
<220>
<221> modified_base
<222> (159)
<223> a, t, c or g
```

```
<220>
<221> modified_base
<222> (208)
<223> a, t, c or g
```

```
<220>
<221> modified_base
<222> (322)
<223> a, t, c or g
```

```
<400> 365
gcgaggcggt atcgcttccc gtgcgtaccgg cgaccgccag ccgagaagct cgttttccca 60
gtgttgctgg ggattctcac gctgctgctg antgctgccc anaccgcttc cgcttcgggt 120
tacaacgagc cgcggggcta cgatcgctgc acgctgaant tgggtgttctc catggacttg 180
gggatgtgcc tgaaccgggt cacctacnac tccaagctgg cgccgtctcg tccgcaggtc 240
gttgcttgcg atagccggga ggcccggatc cgcaatgacg gattccatgc caacgctccg 300
agttgcatgc ggatcgaata cnaattgatc accca 335
```

```
<210> 366
<211> 396
<212> DNA
<213> Mycobacterium tuberculosis
```

```
<220>
<221> modified_base
<222> (171)
<223> a, t, c or g
```

```
<220>
<221> modified_base
<222> (350)
```

<223> a, t, c or g

<400> 366

```

tgggtcttgc cggcgagccc agcgaagtcg ctagcgtggc cgtgtttctt ggcttcggat 60
ctatcctcgt tacatgaccg gcaccgtgtt ggacgtgact ggcggccggt tcatatgaca 120
ccgagatcat tgccacggta cggcaattcg tcaagaagga aatctttccc natgcaccgg 180
ccctcgaacg tggcaacagc taccgcgaag aaatcgtcga tcggctgggt gttattggct 240
tgctcggtcg ccggctgcaa gggatcgcac accaccgagt tcattctcgg gcgtgccggc 300
gcattcgagc tggcgggtgcg cgctgccag caccgtcata agtacttgan gatgggtcaaa 360
cgtcggacga accgccacca cgctcgtgcc gaacgg 396

```

<210> 367

<211> 262

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (19)

<223> a, t, c or g

<220>

<221> modified_base

<222> (23)

<223> a, t, c or g

<220>

<221> modified_base

<222> (84)

<223> a, t, c or g

<400> 367

```

tagatgccc aagcttgccnt tanagacctc gtcgaccaag cacggacgcg accgtcgaag 60
gtggcgaatc cgggcttggc gtcnaccgcg gtaaggcaga ccagatgggt cgcggcacgg 120
tcaacctgcc acacggcact ggtaagactg cccgcgtcgc ggtattcgcg gttggtgaaa 180
aggccgatgc tgccgttgcc gcggggggcg atgttgctcg gagtgacgat ctgatcgaga 240
ggattcaggg cggctggctg ga 262

```

<210> 368

<211> 303

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (291)

<223> a, t, c or g

<400> 368

```

tctccacggc gtggatcaag gtaccggccg ggatgttgcg caatggcagg ttgttgcccg 60
gcttgatgtc tgcgttagcg ccggattcca ccacatcccc ttgcgaaaag tccgttgggt 120
gcaatgatgt agcgcttctc cccatcgaga tagtgagaca acgcaatccg tgcggtacgg 180
ttcgggtcgt actcgatgtg cgcgaccttg gcgttgacac catctttgtc attgcggcga 240
aagtcgatca tccggtgaag cgcgttatga ccgccgcctt tgtgccgggt nggtaatccg 300
gcc 303

```

<210> 369

<211> 367

<212> DNA

<213> Mycobacterium tuberculosis

53941100

<220>
<221> modified_base
<222> (321)
<223> a, t, c or g

<220>
<221> modified_base
<222> (332)
<223> a, t, c or g

<220>
<221> modified_base
<222> (343)
<223> a, t, c or g

<400> 369
gcccggttcg atcgggcatg tccgcagtcg tcgttaccgg aggcgggtcgt ggccgcgcta 60
atcggcgctcg gcgccgacaa gatgtgggat atccgcaatc ggggcgtcat ccctgcgggc 120
gcgctcccc gcgtccgagc cttcgtcgac gcaatcgagg caagtcacga cgcggatgag 180
gggcagcagt gaattacagc gaggtcgagc tgttgagtcg cgctcatcaa ctgttcgccg 240
gaaacagtgc gcgaccgggg ttggatgcgg gcaccacacc ctacggggga tctgctgtct 300
cgggctgccg acctgaatgt nggtgcgggc ancgccggtg tcnactcccg tggaacacag 360
ccggggc 367

<210> 370
<211> 366
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (37)
<223> a, t, c or g

<220>
<221> modified_base
<222> (88)
<223> a, t, c or g

<400> 370
ctcggcgtgg atatcgggtg agccggcgcc ggtgaangtc ggctccttac gtccactcga 60
caacagctca tagcgatcca accagtangc aaccgccttc agcagtacaa ccgcgcccggc 120
gaacactgcg agttgaacgc gagctgcctg ggtcagcatg cctctgccgg ttgtcagccg 180
aaggccgccg aacaggtaat gcgtcaacag gctcgtctaga aacgccagaa ccacggccac 240
gaacagccag ttcagcaccg accggtagaa cggcagatcg aagacgaaaa aacccaatgt 300
catagccgaa ttcgggggtc acgatgccaa aggtgcccc gtgtacaaca actgaacctt 360
caccca 366

<210> 371
<211> 455
<212> DNA
<213> Mycobacterium tuberculosis

<400> 371
tccggctcgt atgttggtg gaattgtgag cggataacaa tttcacacag gaaacagcta 60
tgaccatgat tacgccaagc tatttaggtg acactataga atactcaagc ttcacgtccg 120
tacggctcgg gtacgcttcg gtcgcagtg gcgagtgata gatgacgacc gggacctcgt 180
cggcatcttc catagcccgc cacaccttca gttgctcacc ggaatccaac cggtagaagg 240
tcggcgagcg ctcggcattg gtcatcgga tatgccgctc gggacggtca gagccctcgg 300
gtccggccag cactccgcag gcttcgtcgg ggtggtcgag acgcgcatgg gccaccatcg 360

53941100
cattcaccag gtctgcgcga atcaccagca cgtagacggt tcctttccta agcaacaccg 420
aagtttcagg accgaatgct ccgggaaaca tgtca 455

<210> 372
<211> 196
<212> DNA
<213> Mycobacterium tuberculosis

<400> 372
caggcatgca agcttgatgc cgccgaaacc gagcgtgagc acgccgccag ccaccacgcc 60
cgggtcgggc gccgggcccg ggccgccagg ctgctccgct cggtgatggc acgccaccgc 120
gacaccaccc ggctgcgcta cgtcgagcca taccgggcgg agctccatcc gctcggccgc 180
cagtgtccgg gccctc 196

<210> 373
<211> 443
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (36)
<223> a, t, c or g

<220>
<221> modified_base
<222> (303)
<223> a, t, c or g

<220>
<221> modified_base
<222> (334)
<223> a, t, c or g

<400> 373
cctgcatccg gctcgtatgt tgtgtggaat tgtgancgga taacaatttc acacaggaaa 60
cagctatgac catgattacg ccaagctatt taggtgacac tatagaatac tcaagcttcc 120
aatccccctg ccctgatacg cgtcggcaac cgtgaacgcg atctcggcga ccgtcggatc 180
ggtttcatcc cgcacaaaac gcgcgtcggc tacggggtcg ctcccgtcgg tcaccaccca 240
gacgaagtgg tcgacgtagt cgacttccga caggtagtgc atcaacgccg gactgggaac 300
acnagccgac atgaaccgtc gatacagcgt ctncgccgag aactggatgt gtccgtgcac 360
ggtccgctcg cggtcaccgg gcagcacggg gcgtaacatc agttgagtcc cgtcggcaag 420
ccgtaccgga atcggggaga cga 443

<210> 374
<211> 445
<212> DNA
<213> Mycobacterium tuberculosis

<400> 374
caagatgatc gccggtgccg ccccgatccg tgcctcggtc agcgcgaaac tgctttccgg 60
tccggcgacc accatgtcgc acgcaccgac caggccgaac ccgccggccc gcacatgccc 120
gttgatggcg ccgaccaccg gcagcggcga ctcgacgatg gcgcgcaaca gcgccgtcat 180
ttcccgcgcc cgcgccaccg ccatccggta cggatcacca ccaccaccgc cggcctcgct 240
gaggtccgcg ccggcgcaga acgttccgcc ggtatgcccc agcacgacca gccgcaccgc 300
cggatctgct tcggccgcac tcagcccttg atgtagttag ctgaccagcg tgctcgacag 360
cgcgttgccg ttgtgcggag agttcagtgat cagcctggcg aaggggccgc cgcaggcggc 420
cgggccagcg tagtcgacgg ggctg 445

53941100

<210> 375
<211> 308
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (253)
<223> a, t, c or g

<220>
<221> modified_base
<222> (302)
<223> a, t, c or g

<400> 375
ctcaagcttc gatcgacagt actcccgct tgggtctggt cttcgagctg gtcgggtcatg 60
gtcggacctg ctggtagtgg ggatctaacg caacatgggc gggattcatc atgggtgtacc 120
cgtgataccc attcgcagct gccggtgaaa ccccgcgatg ccgggatttc cagccgcact 180
aggatgtcta gccggccagc cgtgcccgc ggacttcggg atgttcggta taccaccgat 240
cggcaatctt gcntatccgc cgatgctcga acgctagcca ccccaaacca accactgtga 300
cnacaatc 308

<210> 376
<211> 239
<212> DNA
<213> Mycobacterium tuberculosis

<400> 376
tgaatttccc gatccacaa tctcgggttca gatacaggtc gccatacccc ttacttcggc 60
aacgctgggc ggattggccc tgccgctgca gcagaccatc gacgccatcg aattgcccgc 120
aatctcgttc agccaatcca taccatcga cattccgccc atcgacatcc cggcctccac 180
tatcaacgga atttcgatgt cggaggctcgt gccgatcgat gtgtccgctc acattccgg 239

<210> 377
<211> 431
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (346)
<223> a, t, c or g

<220>
<221> modified_base
<222> (417)
<223> a, t, c or g

<400> 377
tactcaagct tgaacgctgc gagcgagccc atgtagagcg tttggtacca aaccgatcgg 60
tgggccaact tgccatgggc tcacagcggc tatcgcgagc gtgtagccga tcatcgcca 120
ggcgacgggtg gcctgagcgg caggggttgc cttatccatc ctcttgccgc atgggttgcg 180
cagggagtgc cggtaagtct ggtcggcaac ctggcccgc gcgggttggg ttcggattcc 240
ctcggctagt aaggtgctcg cctgggtgta caacgaatcg ctagacagct cttatcgga 300
gtggccgctg cgatcgttgc gctgccgctg gcgatcgcgt tcggcattac cgccaccgga 360
acgtcccaag gtgcgctcat cgggctctac ggcgccatct tcgccggatt cttccnngcc 420
gtgttcggtg g 431

<210> 378

53941100

<211> 334
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (281)
<223> a, t, c or g

<220>
<221> modified_base
<222> (284)
<223> a, t, c or g

<220>
<221> modified_base
<222> (314)
<223> a, t, c or g

<220>
<221> modified_base
<222> (334)
<223> a, t, c or g

<400> 378
gcgggtgtctg aacttcgccc gttccctcca gcgcattgag cttcagcccc accggcaggt 60
agggagtcgg catgcggtcc ttcgccccga ccccgctggc taaatagcca ccccgagcg 120
cggtcacggc ctttgcaccg ggacgacggc ataccggcag cgcgaacatc gccgcgggct 180
gcagcgtgaa cgtcgaatac gagtcgaaca gtgtcggcgc gtaaaaaccc gagccggcgg 240
tcgcttcggc aatcaacggc tcctgcgcaa ccagctgcaa ntcnccgggt ccaccggcgt 300
tgacaatctt gatntcggcg acctcgcgca ccan 334

<210> 379
<211> 302
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (40)
<223> a, t, c or g

<220>
<221> modified_base
<222> (224)
<223> a, t, c or g

<220>
<221> modified_base
<222> (268)
<223> a, t, c or g

<220>
<221> modified_base
<222> (278)
<223> a, t, c or g

<400> 379
tactcagctt cggctcaggt ggtgctgctg gtaaagttn ctgaacgggt caggtttcga 60
caatgtgggt ccggttcggc ggggtactgcc atcgagacac tggcgcaggc taticgcaccc 120
gttatcggct acaaacaat cgcgggtatgc gttcttgagc atgagtcggc gaccgtcgtc 180
atggtcgaca cccacgacgg aaagacgcag atcgccgtca agcntgtgtg ccgcggatta 240

53941100

tcaggactga cctcctggct gaccggcntg tttggctncg atgcctggcg cccggccggc 300
gt 302

<210> 380
<211> 240
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (203)
<223> a, t, c or g

<400> 380
catcacctgg ttcatgaaac tggaagcagc gcagcgcttc cttttcggcc gcaacatgag 60
ccagcctctc gtcggcggtc ggggtgcaggt gctcgggcag ctcggccgcg acagccgcct 120
gaccctgaaa ccagcttcca tatcccgcga cgaacgacgc cagtccgcta cgtaaccctt 180
ccgcgactgt ccatggacaa cancgcgctc tccaccgacc gggcccgggt gtgggggtgtt 240

<210> 381
<211> 362
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (58)
<223> a, t, c or g

<220>
<221> modified_base
<222> (84)
<223> a, t, c or g

<220>
<221> modified_base
<222> (333)
<223> a, t, c or g

<400> 381
ctcaagcttc ccggcggcca gtaccgaaag cgcgaaacagc tcgcggcagc ccacaacntg 60
ctgctcgga ttgccggcg cganatcaat tccaggcagc tcccggacaa tgcggctctg 120
ctggcccga acgaaggact cgaggtcacc ccggtgcccg gggtcgtggt gcacctgccg 180
atcgcacagg ttggcccaca accggccgct tgatgcccgg tcggcaagcc cggcagttgc 240
caaaccagc gtgatcaggc tcggctcgcg agttcggcga agaagtggct cgcctgatca 300
cctaccatcg gccaggatct gcgtgtcatc acnacgctc ccaaggaggt tgttgtggtg 360
ct 362

<210> 382
<211> 411
<212> DNA
<213> Mycobacterium tuberculosis

<400> 382
gccacgtttc gcgccgcccg gcatacggcg gcgtaccgat ctccgcgtca tacacccgcg 60
ggtaatcgcc gacggtgccg gttcgcgagc cgaaggtagc gacgctgatt gaatcgagtt 120
ccaggtccag cgggtggcgc agcaacggcg cgagctcaac gacgtcaatc acgttgtcgc 180
tttctacggt caccgaccg gtgaccgtag tcgcccgggt cgctcggccg agaagttgca 240
ccgccaccac cgcgacaccg tcttgacgc ggacgccacc cccggatcgg ttgttggcca 300
aggtaattgg gtcattccat ttgacgggac gccgaccccg cagccccagt accgcccacg 360

53941100
accacgccgg ctgacccac cactgtacga acaccaaggc gacgccgacc a 411

<210> 383
<211> 331
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (203)
<223> a, t, c or g

<220>
<221> modified_base
<222> (209)
<223> a, t, c or g

<220>
<221> modified_base
<222> (292)
<223> a, t, c or g

<400> 383
ctcaagcttg atgccgccta aaccgaagcg tgagcacgcc gccacccacc acgcgcgggt 60
cgggcgccgg gcccgggccg ccaggctgct ccgctcgggt atggcacgcc accgcgacac 120
caccgggctg cgctacgtca agccataccg ggcggagcta catcggctcg gccgcccagt 180
gttcgggccc tctttcgagg tcnaggtcna taccgatttg cgcatccgca gccgcaccct 240
ggacgacaga accgtgccct acgagtgtt gtcggggcgg gccaaagaac ancttggtcat 300
cctggcgcga ttggccggcg cggtccttgt c 331

<210> 384
<211> 254
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (111)
<223> a, t, c or g

<220>
<221> modified_base
<222> (114)
<223> a, t, c or g

<220>
<221> modified_base
<222> (218)
<223> a, t, c or g

<400> 384
ctcgggtacg cttcgggtcgc agtgtgcgag tgatagatga cgaccgggac ctgcgtcggca 60
tcttccatag cccgccacac cttcagttgc tcaccggaat ccaaccggt naangtcggc 120
gagcgctcgg cattgggtcat cgggatatgc cgctcgggac ggtcagagcc ctcgggtccg 180
gccagcactc cgcaggcttc gtcgggggtg tcgcgacncg catggggccac catcgcattc 240
accaggtctg cgcg 254

<210> 385
<211> 346
<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (256)

<223> a, t, c or g

<220>

<221> modified_base

<222> (258)

<223> a, t, c or g

<220>

<221> modified_base

<222> (265)

<223> a, t, c or g

<220>

<221> modified_base

<222> (275)

<223> a, t, c or g

<220>

<221> modified_base

<222> (297)

<223> a, t, c or g

<400> 385

```
ctcaagcttc aattcctcca cgacgcgttc ccaaataaat ttcccgatcc cacaatctcg 60
gttcagatac aggtcgccat accccttact tcggcaacgc tgggctggatt ggccctgccc 120
ctgcagcaaa ccatcgacgc catcgaattg ccggcaatct cgttcagcca atccataccc 180
atcgacattc cgccgatcga catcccggcc tccactatca acggaatttc gatgtcggag 240
gtcgtgccga tcgatntntc cgtcnacatt ccgngnggtca ccatcaccgg caccagnatc 300
gacccgattc cgctgaactt cgacgttctc agcagcgccg gaacca 346
```

<210> 386

<211> 287

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (28)

<223> a, t, c or g

<220>

<221> modified_base

<222> (53)

<223> a, t, c or g

<220>

<221> modified_base

<222> (269)

<223> a, t, c or g

<400> 386

```
ttaacccccg tggcctctac gccgcctncg ggtcgaacat gcatccccgag canatgctcg 60
agcgcgcacc ccaactcgccg atggccggaa ccggctgggt acccggggtg cggtcgacgt 120
tcggcggcga ggacatcggc tgggaagggg cgcttgccac cgctcgtcgaa gacccagatt 180
cgaaggtggt cgtcgtgctc tacgacatga ccccggcgga cgagaagaac cttgaccggg 240
gggaaggctc cgagttcggc atccaccana agatccgatg ccgcgtt 287
```

<210> 387
 <211> 370
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (233)
 <223> a, t, c or g

<400> 387
 ctcaagcttg attttgatca tcatggatga tcatcacccg aagtgtggta gccgcagtgg 60
 ttatcgtggg taccgtcgtg ctttccatgg ggcctcttt cgggctttcc gtattggtct 120
 ggcaggacat tctgggtatc gagttgtact ggatgggtgtt ggcgatgtcg gtgatcctgc 180
 tcctggcggg gggatccgac tacaatctgc tgctgatttc ccggttgaaa aangaaattg 240
 gggccggatt gaacaccgga attatccgtg ccatggctgg taccggggga gtggtgacgg 300
 ctgccggcat ggtgttcgcc gttaccatgt cgttgtttgt gttcagcgat ttgcgaatta 360
 ttggtcagat 370

<210> 388
 <211> 330
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (3)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (19)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (159)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (161)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (305)
 <223> a, t, c or g

<400> 388
 cgnccaaccc gaattggttt tcggcgccnt cggtaggagc ggcgtgcggg tgctcaacga 60
 cgacgtcgtc cgcgggacac acctcgatgc tgccgccatg gacgcggtcg aacgcaagca 120
 gctgatcgag ctacaacgcc gcgcggaacg cttccgccnc nggcgttacc gcatcccgtt 180
 gaccgggcgg atcgcggtga tcgtcgatga cggcatcgcc accggagcga cggccaaggc 240
 ggcgtgccag gtcgcccggg cgcacggtgc ggacaagggt gtgctggcgg tcccgatcgg 300
 cccanacgac atcgtggcga gattcgccgg 330

<210> 389
 <211> 346
 <212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (109)

<223> a, t, c or g

<220>

<221> modified_base

<222> (182)

<223> a, t, c or g

<220>

<221> modified_base

<222> (193)

<223> a, t, c or g

<220>

<221> modified_base

<222> (226)

<223> a, t, c or g

<220>

<221> modified_base

<222> (233)

<223> a, t, c or g

<220>

<221> modified_base

<222> (247)

<223> a, t, c or g

<400> 389

```
cgtgactgcc accggggcca ctccgcagaa tctgtaccg accaagatct acaccatcga 60
atacgacggc gtcgccgact ttccgcggta cccgctcaac tttgtgtcna ccctcaacgc 120
cattgccggc acctactacg tgcactccaa ctacttcac ctgacgccgg aacaaattga 180
cncagcgggt ccnctgacca atacggtcgg tcccacgatg acccantact acntcattcg 240
cacgganaac ctgccgctgc tagagccact gcgatcgggt ccgatcgtgg ggaacccact 300
ggcgaacctg gttcaaccaa acttgaaggt gattgttaac ctgggg 346
```

<210> 390

<211> 355

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (13)

<223> a, t, c or g

<220>

<221> modified_base

<222> (24)

<223> a, t, c or g

<220>

<221> modified_base

<222> (353)

<223> a, t, c or g

<400> 390

```
tcgctcaagc gcntgaggcc gaancggctg gttacgactc cctgtttgtg atggaccact 60
```

53941100

```
tctaccaact gcccatgttg gggacgcccc accagccgat gctggaggcc tacacggccc 120
ttggtgcgct ggccacggcg accgagcggc tgcaactggg cgcgttggtg accggcaata 180
cctaccgcag cccgaccctg ctggcaaaga tcatcaccac gctcgacgtg gttagcgccg 240
gtcgaagcgt cctcggcatt ggagccggtt ggtttgagct ggaacaccgc cagctcggct 300
tcgagttcgg cactttcagt gaccggttca accggctcga aaaggcgcta canat 355
```

<210> 391
 <211> 403
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (82)
 <223> a, t, c or g

```
<400> 391
ataactcaagc ttccgctggg gcctgttcaa ccatggcgat cccgttggtc ccggacatcc 60
cgaacgagga caccgcgacc cncttcggtg tgtgatcatt accgttgggc cactgcgtaa 120
ccgcttgccg cacaaagagc ccggtctcga cgtcggaaag ctcatcgggc acccgattga 180
aatgcagcag cggcggcacc accccgtgcc gcagtgcagc aattgccttg atcagcccga 240
cgggtccccgc cgatgccgtg ctgtgccccca tgttgctctt ggccgatcca agcgcgcagg 300
gggtgccccgc gccatacacc cgcgccaggc tgcggtactc aatcgggtcg ccgattggcg 360
taccggtgcc gtgcgcctcc accacaccga ccgtttcggg ctg 403
```

<210> 392
 <211> 440
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (73)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (108)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (164)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (282)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (288)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (291)
 <223> a, t, c or g

<220>

<221> modified_base
 <222> (293)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (306)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (326)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (335)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (346)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (354)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (370)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (378)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (380)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (382)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (384)
 <223> a, t, c or g

```
<400> 392
caacagcggt ccagcggcat accaccgcac atgccgtgca cccggcgccg ggcggagtcg 60
ccgcataaca cangtacacc ttgggaatcg gtgtgcgcca gggattcnac cgcggggtgg 120
ggccggcgat cgcgcgccag gtcgagttgg cgccgaccgt gatntcaccg ccgacgtagt 180
tggcgtttgt gtccgccatc cgcgcggcgg gcacggcgcg ggccgccacc acgatgtcac 240
ggaagccggg ggcgaacgct cgacgacctg gttaccgtct cngtcgcntc nancgtggac 300
ccgacngcac gtgggcatat gtccanaacg gacgnggccg gtttcntcga tgcngccggg 360
gtccgcgaacn tgcggacnch cngncacacc atccgccagt ccgcgtggcg tcccgcgcgg 420
actctgcctc ggccgcgccg                                     440
```


<210> 393
 <211> 353
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (12)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (36)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (61)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (83)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (343)
 <223> a, t, c or g

<400> 393
 ctcaagcttt gncgacgac gggcgatgtc gatganagga aaccccagcg cacaaccgac 60
 nattttggcg tagccggcgg acntctgctc gattccgac acgtcggcgc tcgcatcgag 120
 catggcgccg gcgacggcta gcagcgatcc gccgtcgtcg aggaacacga cacgagccgt 180
 acgcccggcc gtaagccgcg cccaggattc ggcgaaaaac cgttctacgt ggcgggtgta 240
 ctgggtgtcc aatgattcgt ggggtgcgta ggcgtcgtcg caatcgtcga cataaatgcc 300
 gtcggcccgcc atcgcgtcaa caactcccgg gtgagtggaa tancacttgc cga 353

<210> 394
 <211> 340
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 394
 tccaacgcgg tgacagattt gtctatcctg gacctgacgg tgaggtcgaa gttttccagg 60
 aattcgga aatcggtta agcctgaaga attcggtatc gccggacgaa atctgacgag 120
 catacggggc agatacgctt cgggtttacg agatgtcgat ggggccgctg gaggcttcac 180
 gtccatgggc cacaaggat gttgtcggcg cgtaccgttt tctgcagcgg gtgtggcgct 240
 tggtcgtcga cgagcacacc ggcgaaactc ggggtggctga cggcgtggaa ctcgacatcg 300
 atacgctacg ggcgttgac cgcaccatcg tcggcgtgtc 340

<210> 395
 <211> 362
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (30)

<223> a, t, c or g

<220>

<221> modified_base

<222> (45)

<223> a, t, c or g

<220>

<221> modified_base

<222> (70)

<223> a, t, c or g

<220>

<221> modified_base

<222> (244)

<223> a, t, c or g

<220>

<221> modified_base

<222> (247)

<223> a, t, c or g

<220>

<221> modified_base

<222> (296)

<223> a, t, c or g

<400> 395

```
ctcgtccttg actacgccca gtatcgaaan cctcctgtgc cggtncgcta aacacccggc 60
ggacactcan acggtgctgg tgggtcggca tggcaccgcg ggagcaaaag cgcacttctc 120
cggggacgac agcaagcgac cgctagacaa gaggggtcgt gcgcaggcag aagcgttggt 180
accacagctg ctggcgttcg gcgccaccga tgtttatgcc gccgaccggg tgcgctgcca 240
ccanacnatg gagccactcg ccgcggaact gaacgtgacc atacacaacg agcccnccct 300
gaccgaagag tcctacgccca acaaccccaa acgcggccga caccgagtgc tgcagatctt 360
cg
```

<210> 396

<211> 356

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (12)

<223> a, t, c or g

<220>

<221> modified_base

<222> (327)

<223> a, t, c or g

<220>

<221> modified_base

<222> (355)

<223> a, t, c or g

<400> 396

```
gtatcgccctc cncctttggc caccagcagc cacagcgcgg ttcgcgacc gaacgtggac 60
atcaatagcc cggaatcggg gtgtgcaagt tggtaaacgg tgttgatccc aagctttgcc 120
agccttttcg tagtcttggg cccacacccc cacagtgcct cgacggtagc gtcacccatg 180
atggccatcc agttggcatc ggtgagctga tagatgccag ctggtttcgc caacccggta 240
gcgatcttgg cgcgctgctt gttgtcactg atacctatcg agcaagacag cccggtttgc 300
```

53941100
gacaagatga cttttcggat ctcttcngcg aacttccaat ggggggtctcc gggant 356

<210> 397
<211> 350
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (99)
<223> a, t, c or g

<220>
<221> modified_base
<222> (102)
<223> a, t, c or g

<220>
<221> modified_base
<222> (274)
<223> a, t, c or g

<220>
<221> modified_base
<222> (293)
<223> a, t, c or g

<220>
<221> modified_base
<222> (295)
<223> a, t, c or g

<220>
<221> modified_base
<222> (326)
<223> a, t, c or g

<400> 397
ctcaagcttt tggcttagcc ggccgagcac gatacgggtg tccttggcca ccggcggcgg 60
ctgtccggga aatggcgggt ccccgggtggt tttgctgang antgctgaac cgtagtcgaa 120
gtgggcggcg tcagactcca cccagccagc aggcagcgcg aagctgaatc ctccaaccgg 180
gttgctgatc cggacagggt ggggtgctgt tggggcaatg acagggtggcg gcggtgcgtt 240
cgggtcggcc ggcggagggt ctgcgttggg atcncgccgc tgggcattcg gcntnttggc 300
ggcggccgggt ggtggggggg caacangtgt cccggtgcgg gtggcgctgc 350

<210> 398
<211> 355
<212> DNA
<213> Mycobacterium tuberculosis

<400> 398
atctgtaccg gaccaagatc tacaccatcg aatacgcgg cgtcgccgac tttccgcgggt 60
accgctcaa ctttgtgtcg accctcaacg ccattgccgg cacctactac gtgcactcca 120
actacttcac cctgacggcg gaacaaattg acgcagcggt tccgctgacc aatacggctcg 180
gtccacgat gaccagtagc tacatcattc gcacggagaa cctgccgctg ctagagccac 240
tgcgatcggg gccgatcgtg ggggaacccac tggcgaacct ggttcaacca aacttgaagg 300
tgattgttaa cctgggctac ggcgacccgg cctatggtta ttcgacctcg ccgcc 355

<210> 399
<211> 360

53941100

<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (41)
<223> a, t, c or g

<220>
<221> modified_base
<222> (59)
<223> a, t, c or g

<220>
<221> modified_base
<222> (198)
<223> a, t, c or g

<400> 399
ctcaagcttg caatgcgggt cgggatgccc atggttggaa natggtcgcc ctggcgtcna 60
atacgcgcga gcgcgatgag tcaccgggtc ggaacaacgt atcgaaaaac gtcgcactgc 120
tggcagatgg tatctccgat gtggttgtaa tttgtatccc aactctaact gtgctatcgg 180
atcagcgtga atatcganat attgcgaatg cgatgacagg ccgccattcg gtttattcgc 240
ttacgcttcc cgggttcgat tcgtctgatg cactgccgca aaacgcggat atgattgttg 300
aaaccgtatc taacgcaatt attgatgtgg taggcggcag ctgccgtttt gtgctgtcgg 360

<210> 400
<211> 272
<212> DNA
<213> Mycobacterium tuberculosis

<400> 400
caaatacacg ccggacgcac aggcggacat cgccatcccc agcacacca aaacgggata 60
caggatggag gccaacgcca cggccgcgcc caggatcacc aaccacaccg gcttggtcag 120
cttgctcggc gcggtatagg catcgggccg ctgcaacgca gcatgcacaa acgcgtacac 180
cgctgtcacc aagacggcga ccagcaatac cagcatgacg gtaccacga ggtggctcac 240
gcattcagac tatgcggttt gcatccaaca cg 272

<210> 401
<211> 306
<212> DNA
<213> Mycobacterium tuberculosis

<400> 401
ctcgtccttc ggcctcgctg caggagtggg agccgcaggg ctggaaatcc gaaaaacgag 60
ccggtgatcg cactgtcgcc gatcggcgcc gcacctggtt ggtgttacgg atgaatccgc 120
agcgaatgtt ggctgcggtg gcgtgtcgtg actcgttggc gtcgacgctg gtggcagcca 180
ccgagcggtt ggtccaggat ctggatgggc aaagtgtgtc ggcccggccg gtgacggccg 240
atgagctgac cgaggtcgac agcgcctgtt tggctgactt ggaaccgaca tggagtgcgc 300
ccggtt 306

<210> 402
<211> 300
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (7)
<223> a, t, c or g

53941100

<220>
<221> modified_base
<222> (90)
<223> a, t, c or g

<400> 402
gtctagnccg ccgaacacga tacgggtgtc attggccacc ggcgggcggt gtccgggaaa 60
tggcggggtcc ccggtgggtt tgctgaagan tgctgaaccg tagtcgaagt gggcgggcgtc 120
agactccacc cagccagcag gcagcgcgaa gctgaatcct ccaaccgggt tgtcgatccg 180
gacaggttgg ggtgcgtttg gggcaatgac aggtggcggc ggtgcgttcg ggtcggcccg 240
cggaagtgtc gcgttgggat cgcccggctg ggcattcggc gtgttggcg cgcccggtgg 300

<210> 403
<211> 396
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (113)
<223> a, t, c or g

<220>
<221> modified_base
<222> (318)
<223> a, t, c or g

<220>
<221> modified_base
<222> (346)
<223> a, t, c or g

<220>
<221> modified_base
<222> (390)
<223> a, t, c or g

<400> 403
actcaagctt gagattggcg tcaacgggtg tcggcaccgg cgtcctgcag ttggtaggcc 60
tgcaatttgt gcatcaggcc gatgccgcgg ccctcgtggc cacgcatgta cancaccacg 120
ccgcgccccct cacgggagcag catcgccagc gcggcggtcca gctgaggccc gcaatcgag 180
cggcgtgacc caaacacatc gccggtcaag cactccgaat gcacccggac cagcacgtcg 240
tcaccgtcgg cggtggggccc ggcgatctcg ccgcggacca gcgcgacatg ttccacgtcc 300
tcgtaaatgc tgggtgtancc gatggcgcgga aactcccat gacaantcgg aatcccgcgc 360
ctcggcgacc ccgctcaatg ttgcttctcn tgcttg 396

<210> 404
<211> 352
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (6)
<223> a, t, c or g

<220>
<221> modified_base
<222> (19)
<223> a, t, c or g

53941100

```
<400> 404
tcgacnagca ttcttgacng ttgttttggc tcggcatggt tagccaaggt tctgcggtcc 60
caccagatca tcttggtccg gtagcgctcg tccgggtatg ctgccgccgg gattctcgct 120
gctattactc cccccgaaga acgccaccgg tccagcgctg gggccgccgc ggtcccatc 180
acaaactgaa cccccaacag gggacatgct tagcggtagg gcgcgcgcca aggcggcagc 240
aatcgcatca ctgcgctgcg cgtcactatt aaccaccccg gatttcactt ccacgacccc 300
gaatggcgcc cggtcattga tcattcttgcg caccgcggat aatccgggat tg 352
```

```
<210> 405
<211> 420
<212> DNA
<213> Mycobacterium tuberculosis
```

```
<220>
<221> modified_base
<222> (36)
<223> a, t, c or g
```

```
<220>
<221> modified_base
<222> (99)
<223> a, t, c or g
```

```
<220>
<221> modified_base
<222> (174)
<223> a, t, c or g
```

```
<220>
<221> modified_base
<222> (207)
<223> a, t, c or g
```

```
<220>
<221> modified_base
<222> (216)
<223> a, t, c or g
```

```
<220>
<221> modified_base
<222> (237)
<223> a, t, c or g
```

```
<220>
<221> modified_base
<222> (321)
<223> a, t, c or g
```

```
<220>
<221> modified_base
<222> (328)
<223> a, t, c or g
```

```
<220>
<221> modified_base
<222> (345)
<223> a, t, c or g
```

```
<220>
<221> modified_base
<222> (353)
```

<223> a, t, c or g

<220>

<221> modified_base

<222> (369)

<223> a, t, c or g

<220>

<221> modified_base

<222> (385)

<223> a, t, c or g

<220>

<221> modified_base

<222> (408)..(409)

<223> a, t, c or g

<400> 405

```
accggggcca ctccgcacaa tctgtacccg accaanatct acaccatcga atacgacggc 60
gtcggcgact ttccgcggta cccgctcaac tttgtgtcna ccctcaacgc cattgccggc 120
acctactacg tgcactccaa ctacttcata ctgacgccgg aacaaattga cgcngcggtt 180
ccgctgacca atacggctcg tcccacnatg acccantact acatcattcg cacgganaac 240
ctgccgctgc taaagccact gcgatcgggt ccgatcgtgg ggaaccact ggcgaacctg 300
gttcaaccaa acttgaaggt nattgttnac ctgggctacg gcganccggc ctntggttat 360
tccacctcnc cgcccaatgt ttgcnactcc cgttcggggg tgttcccna aggtcaaccc 420
```

<210> 406

<211> 328

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (12)

<223> a, t, c or g

<220>

<221> modified_base

<222> (23)

<223> a, t, c or g

<220>

<221> modified_base

<222> (277)

<223> a, t, c or g

<400> 406

```
cgctcaagcg cntgaggccg aancggctgg ttacgactcc ctgtttgtga tggaccactt 60
ctaccaactg cccatgttgg ggacgcccga ccagccgatg ctggaggcct acacggccct 120
tggtgcgctg gccacggcga ccgagcggct gcaactgggc gcgttggtga ccggcaatac 180
ctaccgcagc ccgaccctgc tggcaaagat catcaccacg ctcgacgtgg ttagcgccgg 240
tcgagcgatc ctcggcattg gagccggttg gtttgantcg gaacaccgcc agctcggctt 300
cgagttcggc actttcagtg accggttc
```

<210> 407

<211> 315

<212> DNA

<213> Mycobacterium tuberculosis

<400> 407

```
ctcaagcttg cgttcgatga agtagtcgtc ggtcagcgcc gcctcttcga gctccttggc 60
```

53941100

```

gatgcccagc aaggagtcac cgccgcccag cttggccagg atcttgctcg cctgttcctt 120
gacgatgcgg gcccgcggat cgtagttctt gtagacacga tgaccgaaac ccatcaattt 180
gaccccggcc tcgcggttct tgaccttgcg tacaaactcg ctgacgtcgt cgccgctgtc 240
gcgaatgccc tcgagcatct ccaggacagc ctgattggcg ccgccatgaa gcggacccca 300
tagtgcggtg atgcc                                     315

```

<210> 408
 <211> 329
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (200)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (281)
 <223> a, t, c or g

```

<400> 408
ggtcaggccg agcaggcgcg aggaacgacg aacccaacaa gccatgggtg ttggcgccgt 60
cgagaggctg gcggtcgcca caacgggaag atcgcttga gcgtcgctcg accgccgcct 120
cgagttgggt cataacgaag tagctgatgc cgatcatgtc gacgtttccg tcgcatcagc 180
gtgcagcggc gacccactcn acgaggtctc ggtgccgccg cggccagggc accagcagtg 240
acgagtcagc gcgccgtcgg gccaagcagt cgcggtgcca nccgtggtgg gtcgggcgat 300
ggttgggtgt gtcatttcg ggaacgcca                                     329

```

<210> 409
 <211> 294
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (48)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (194)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (204)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (206)..(207)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (271)
 <223> a, t, c or g

```

<400> 409
ctcgaagctt taacagcatc aaccccggcc cgcaccagca ccgacacnat gtcgatgcc 60

```


53941100

tcgaggtgaa	tgtcgaactg	gcgcaaacca	tcggcgaccg	cgaccaccgg	caacatgggt	120
accggcgatt	tccggtgcca	atgccgaccc	gacggggccg	tctcaccgca	ggtgacctcg	180
atcaccgaga	ccanccggcc	gttntntca	cgacccccta	ccgtgtcacg	cccaaaacgg	240
cgctggtggt	cgattgcccg	agtgcacccc	ncaccagtg	tcgtgcccgg	atcc	294

<210> 410
 <211> 288
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (168)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (210)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (228)
 <223> a, t, c or g

<400> 410	
tgatgccgca	cccgatcgac ggtcgttggt cgggggttgac tggccgcccg gcgaagcagg 60
gcgtcgaccg	cggcccggac gtcggcggcc gtcaccggtc ggccattgcc cgggcgggag 120
tcgtcgagct	gaccacggta gacaagtcgg cgctggccgt cgaagacnaa cgtgtcgggt 180
gtgcaggccg	cggagaaggc gcgggcgacn tcttggttt cgtcgtanag atacgggaac 240
gtccagccgt	ggcggcgggc ctcggcgacc atctgatcgg gcccgtcc 288

<210> 411
 <211> 420
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (20)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (27)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (51)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (98)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (148)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (214)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (293)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (299)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (313)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (328)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (342)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (356)
 <223> a, t, c or g

<400> 411
 ttctgggcca ggcggtatan cttcccntcg taccggcgac cgccagccga naagctcggt 60
 ttcccagtgt tgctggggat tctcacgctg ctgctgantg cgtgccaaac cgcttccgct 120
 tcgggttaca acgagccgcg gggctacnat cgtgcgacgc tgaagttggt gttctccatg 180
 gacttgggga tgtgcctgaa ccggttcacc tcnactcca agctggcgcc gtctcgccg 240
 caggtcggtg cttgcgatag ccgggaggcc cggatccgca atgacggatt ccntgccanc 300
 gctccgagtt gcntgcggat cgactacnaa ttgatcaccc anaaccatcg ggcgtnttac 360
 tgcctgaagt acctggtgcg ggtcggatgc tgctatccgg cggtgacaac cccggcaagc 420

<210> 412
 <211> 378
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (341)
 <223> a, t, c or g

<400> 412
 gttttggctc ggcattggtta gccaaagggtc tgcggtccca ccagatcatc ttggtccggt 60
 agcgtctgct cgggtatgct gccgccggga ttctcgctgc tattactccc cccgaagaac 120
 gccaccggct cagcgcgtgg gccgccgcgg tccccatcac aaactgaacc cccaacaggg 180
 acatgcttag cggtagggcg cgcgccaagg cggcagcaat cgcactcactg cgtgcgcgt 240
 cactattaag ccaccggac ttcaactcca cgaccccgaa tggcgcccgg tcattgatca 300
 tcttgccgac cgcggataat ccgggattgc cagcccatc nactaccgca tgcgagtcac 360

cggctgaccg cagcggtc

378

<210> 413
 <211> 347
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (33)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (69)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (91)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (254)
 <223> a, t, c or g

<400> 413
 tcgcctaggc gggcttcccc ttccgtccga gcngtcagaa gctcctatga caatgcacta 60
 cccgagacna tcaacggcct atgcaatacc nagctgatca aacccggcaa gccctggcgg 120
 tccatcgagg atgtcgagtt ggccaccgcg cgctgggtcg actggttcaa ccatcgccgc 180
 ctctaccggt actgcggcga catccccgcg gtctaactcg acgccgcctc actacgctca 240
 acgccagaga ccancggcgg gctgacgtct cagatcagag agtctccgga ctcaccgggg 300
 cggttcatcc ccactgtcga tagcgtctgt ggataacttt gtctgca 347

<210> 414
 <211> 165
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (7)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (37)
 <223> a, t, c or g

<400> 414
 ggcggtngaa ctgatagggt cggcccggct cgagcangcc ggccatttgt tcgatgcggt 60
 taccgaagat ctcttcggtg acctgcccgc cgccggccag ctcgggccag tgcccggcgt 120
 tggccgccgc ggcgacaatc ttggcgtcca cggtggtctg ggtca 165

<210> 415
 <211> 317
 <212> DNA
 <213> Mycobacterium tuberculosis

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<220>
<221> modified_base
<222> (57)
<223> a, t, c or g

<400> 415
ctcaagcttc aatacagagt tataaactgt gataatcaac cctcatcaat gatgacnaac 60
taacccccga tatcagggtca catgacgaag ggaaagagaa ggaaatcaac tgtgacaaac 120
tgccctcaaa ttgggcttcc ttaaaaatta cagttcaaaa agtatgagaa aatccatgca 180
ggctgaagga aacagcaata actgtgacaa attaccctca gtaggtcaga acaaatgtga 240
cgaaccaccc tcaaattctgt gacagataac cctcagacta tcctgtcgtc atggaagtga 300
tatcgcgga ggaaaat 317

<210> 416
<211> 379
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (236)
<223> a, t, c or g

<220>
<221> modified_base
<222> (277)
<223> a, t, c or g

<220>
<221> modified_base
<222> (302)
<223> a, t, c or g

<400> 416
ctcaagcttc gatcgacatt actccgcct tgggtctggt ctccgagctg gtcgggtcatg 60
gtcggacctg ctggtagtgg ggatctaacg caacatgggtc gggattcatc atggtgtacc 120
cgtgataccc attcgcagct gccggtgaaa ccccgcgatg ccgggatttc cagccgcact 180
aggatgtcta gccggccagc cgtgcccgc ggacttcggg atgttcggta taccancgat 240
cggcaatctt gcgtatccgc cgatgctcga acgctancca cgccaaacca accactgtga 300
cnacaatcgc caccacacca aaggtcatgc cctcggcgtg atgtccggtg ccgaaagccg 360
caagagctcc gacgcccgc 379

<210> 417
<211> 420
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (21)
<223> a, t, c or g

<220>
<221> modified_base
<222> (104)
<223> a, t, c or g

<400> 417
cattcccaat tgaatttccc natcccacaa tctcggttca gatacaggtc gccatacccc 60
ttacttcggc aacgctgggc ggattggccc tgccgctgca gcanaccatc gacgccatcg 120
aattgcccgc aatctcgttc agccaatcca taccatcgca cattccgccg atcgacatcc 180

53941100

```

cggcctccac tatcaacgga atttcgatgt cggagggtcgt gccgatcgat gtgtccgctg 240
acattccggc ggtcaccatc accggcacca ggatcgaccc gattccgctg aacttcgacg 300
ttctcagcag cgccggaccc atcaacatct cgatcatcga cattccggcg ctgccgggct 360
ttggcaactc gaccgagctg ccgtcgtcgg gcttcttcaa caccggcggc ggtggcggct 420

```

<210> 418
 <211> 255
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (26)..(27)
 <223> a, t, c or g

```

<400> 418
ctcaagcttt cggcgggagac ggacannttg cgaacattga tgacaaaata gaaatcattg 60
atggtttgag tcaccaggcc gatcaagcct tcgccgagcc aaattccaat caagaggccc 120
aagcccgtac caatcagccc ggcaacgagg gattccgtca ttatcagcca aaataactgc 180
tctcgggtta cacccaaaca gcgcaatatg gcgaaaaacg gtcgccgttg cacgacatta 240
aatgtcacgg tattg                                     255

```

<210> 419
 <211> 359
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (64)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (78)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (244)
 <223> a, t, c or g

```

<400> 419
agcttaactg ctccctaata cctggggctg tgcctgcggt gtatgcacgg catacggaca 60
tccntccctt gagaccncg gtctaatacag ccacgtgtcc accatcaggg gtcaaccccg 120
gccaaaggcg acggcacccc aagttcgccg accgttaacc tattgctgtg agcttcattt 180
gctgcgagca aaacagttgg tcggccgtta ggaactgaat tgacactcaa ccgatttggt 240
gccnccgtag gtgtcctggc tgcgggtgag ctggtgttgt ccgcgtgttg taacgaccac 300
aatgtgaccg ggggagggtgc aaccactggc cacgcgtccg cgaatgtcta ttgcggggg 359

```

<210> 420
 <211> 314
 <212> DNA
 <213> Mycobacterium tuberculosis

```

<400> 420
ctcaagcttg ggggtggcgct gtcgggtcgt gtgcttggcg gcgtcgggtat caacaccgcc 60
cacgaaatgg ggcacaagaa ggattcgctg gagcgggtggc tgtccaaaat caccctcgcc 120
cagacctgtc acgggcactt ctacatcgag cacaaccgtg gccatcacgt ccgggtgtcc 180
acaccggagg acccggcgtc ggcgcggttc ggcgaaacgt tgtgggagtt cctgccccgc 240

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53941100

agtgttatcg gcggttgcg ctcggccgtt catttgagg cccaacggct gcgtcggctc 300
ggcgtcagcc ccct 314

<210> 421
<211> 280
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (162)
<223> a, t, c or g

<400> 421
gcaccaaggc cccacacgtc accctgtgac ctctgcgcc gaccccgccc gaggtcctgg 60
ccgttaccac ctgaacgggc gagccgggag tctggtacgc atcgaacaaa gagcaagggtg 120
catgggcgga gttgttccgc cacttcgtcg atgacgggggt cnatccattc gaggtccgtc 180
gccgcgtcgg tcgagtggcg gtcacactcc aggtactcga cctcacagac gagaggactc 240
gatcccatct aggtgtggac gaaacagatc ttctgtccga 280

<210> 422
<211> 230
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (145)
<223> a, t, c or g

<220>
<221> modified_base
<222> (230)
<223> a, t, c or g

<400> 422
tcgcctccgc atatgggtcg acgccaagcg ggtccggatt tctgggcttc atcgctcgcg 60
ccgtcgcgac aaacagcgcg gtcgaaccga cactcgttgt gatgtcccag ctatcacctt 120
cggtacgcac ccaatcgacc ctacnccggt atctcagccg cgatctccag gctccgccga 180
gccagggtgca tcccgggtccg gatcccacta acccggcacc attggcgctn 230

<210> 423
<211> 272
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (21)
<223> a, t, c or g

<220>
<221> modified_base
<222> (25)
<223> a, t, c or g

<400> 423
gtcctcgagt gccgcgctcg ncacncccag cgcccgcgcg gccacttgga tgcgaccctg 60
ttcaagtccc ttcacatctt gcgaaaagcc ttgacctatg gctccgccca ggatcgccga 120
gaccggcacc cggaggttgt cgaacgacag ctcgcaggat tcgacgccct tgtaacccaa 180

53941100

cttcggcaag tcccgcgaca ccgtgagtc cggcccgggt tcgacgagca cgatcgacat 240
gccttggtgc cgcggtgtgg cgttcgggtc gg 272

<210> 424
<211> 423
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (69)
<223> a, t, c or g

<220>
<221> modified_base
<222> (76)
<223> a, t, c or g

<220>
<221> modified_base
<222> (81)
<223> a, t, c or g

<220>
<221> modified_base
<222> (93)
<223> a, t, c or g

<220>
<221> modified_base
<222> (104)
<223> a, t, c or g

<220>
<221> modified_base
<222> (141)
<223> a, t, c or g

<220>
<221> modified_base
<222> (173)
<223> a, t, c or g

<220>
<221> modified_base
<222> (179)
<223> a, t, c or g

<400> 424
ggcataccaa tgttgacttc tgctcaccca cgatatccgt ggtctgatcc gctgctgcgg 60
cgggctgcna cctgcntctc ngcggcaccc gtnactacat ggcncgcgcc gcacgcatac 120
gtcgcggcgg gaccactcc nactggtcga cgggtgctgg cgcgtgtccg cangtcccna 180
acccggccgc accgacgaaa ccggccgcgc tccgttctgg accaacgctc atgtgccgtc 240
ggggtccatg ctcgacgcca tcgagaccgt aaccagcgtc ctcgagcggg tcgcctccgg 300
cttcctgtgac atcttcgtgg ctgctcgcgc cgtgccgccg cgcggatggt cgaccacaac 360
gccaaccacc tcggcgggtga catcaccgtc cgcgccactc gacctggcgc gcgatcgcg 420
ccc 423

<210> 425
<211> 315
<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (18)

<223> a, t, c or g

<220>

<221> modified_base

<222> (55)

<223> a, t, c or g

<220>

<221> modified_base

<222> (245)

<223> a, t, c or g

<220>

<221> modified_base

<222> (269)

<223> a, t, c or g

<220>

<221> modified_base

<222> (286)

<223> a, t, c or g

<220>

<221> modified_base

<222> (308)

<223> a, t, c or g

<400> 425

gtgagcagac	ctacgccncc	tggttgcgcc	aactcggtag	cgatcatggc	gcgcngcctg	60
tcgtcaccga	taccagcga	acaagacagc	ccggtccgcg	acaagatgac	tttcccgatc	120
tcttcggcga	cttccatggg	gtcgtccgga	gtcccgggag	ccaccgagag	gtaaccctcg	180
tctcagtccc	atacgcgacc	gggtatccac	gtcgcgcaac	aacgccacca	cctccccaga	240
cgccncgttg	tacgcggctg	ggttccacng	caataagtgg	cctcanggca	tcgtccggcg	300
gcggtcncna	acgca					315

<210> 426

<211> 335

<212> DNA

<213> Mycobacterium tuberculosis

<400> 426

ctcaagcttg	aggttaactt	tgaacggatc	gagctggacg	ttcgagacgg	tgatcggggc	60
gaacctgaat	tgtccggtaa	tgcccaacgc	aaaaagcagg	gtggtggccg	gggcgggtgaa	120
accggcgtcg	gcggcaccgt	cgaaatctat	gtggattgcc	ggaatgggga	tgtccggcac	180
ggcgaaaccg	tagttcgctt	gtcccgtgag	gcccagggtg	atggggggaa	agatcctggg	240
gtccgggata	ataatggggc	cgatgccgcc	ggttgaagtc	cactggatcg	ggaattccgg	300
aatcttgatc	cgacgttcag	gccgaacagg	ccctc			335

<210> 427

<211> 346

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (188)

<223> a, t, c or g

<220>

<221> modified_base

<222> (226)

<223> a, t, c or g

<400> 427

cggcgacgtc	gcgatacgcc	gagcagttgg	gaatcgctct	gcagcaaacc	aatattctgc	60
gcgacgttcg	agaggacttt	ttgaatggac	ggatctacct	gccgcgcgac	gagctggacc	120
gattaggcgt	acgcctccgc	ctggacgaca	ccggggcact	cgatgacccc	gacggacggc	180
tcgcggcnct	gctgcggttc	agtgccgacc	gcgccgcaga	ctggtnnttcg	ctgggactgc	240
ggctgattcc	acacctcgac	cgccgcagcg	ctgcctgctg	tgcggccatg	tctggcatct	300
accgccgtca	gctcgccttg	atcagagcat	cgccggcggt	cgtcta		346

<210> 428

<211> 332

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (137)

<223> a, t, c or g

<220>

<221> modified_base

<222> (149)

<223> a, t, c or g

<220>

<221> modified_base

<222> (212)

<223> a, t, c or g

<220>

<221> modified_base

<222> (218)

<223> a, t, c or g

<220>

<221> modified_base

<222> (254)

<223> a, t, c or g

<220>

<221> modified_base

<222> (258)

<223> a, t, c or g

<220>

<221> modified_base

<222> (283)

<223> a, t, c or g

<220>

<221> modified_base

<222> (318)

<223> a, t, c or g

<400> 428

ctataaaata	ctcaagcttg	atgccgccga	aaccgagcgt	gagcacgccg	ccagccacca	60
------------	------------	------------	------------	------------	------------	----

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```
cgcgcggggtc gggcgccggg cccggggccgc caggctgctc cgctcgggtga tggcacgcca 120
ccgcgacacc acccggtgctc gctacgtcna gccataccgg gcggagctac atcgggtcgg 180
ccgcccagtg ttcggggccct ctttcgaggt cnaggctcnat accgatttgc gcatccgcag 240
ccgcaccctg aacnacanaa ccgtgcccta ctattgcttg tcnggcgggg ccaaaaaaca 300
gcttggcatc ctggcccnat tggccggcgc gg 332
```

<210> 429
<211> 276
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (249)
<223> a, t, c or g

<220>
<221> modified_base
<222> (253)
<223> a, t, c or g

<220>
<221> modified_base
<222> (260)
<223> a, t, c or g

<220>
<221> modified_base
<222> (263)
<223> a, t, c or g

```
<400> 429
cttcggtcgc agtgtgagag tgatagatga cgaccgggac ctctgcggca tcttccatag 60
cccgccacac cttcagttgc tcaccggaat ccaaccggta gaaggctcgg gagcgctcgg 120
cattggtcat cgggatatgc cgctcgggac ggtcagagcc ctcggttccg gccagcactc 180
cgcaggcttc gtcggggtgg tcgagacgcg catggggccac catcgattc accaggtctg 240
cgcgaatcnc cancacgtan acngttcctt tcctaa 276
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<210> 430
<211> 420
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (99)
<223> a, t, c or g

<220>
<221> modified_base
<222> (113)
<223> a, t, c or g

<220>
<221> modified_base
<222> (164)
<223> a, t, c or g

<220>
<221> modified_base
<222> (195)

<223> a, t, c or g

<220>

<221> modified_base

<222> (233)

<223> a, t, c or g

<220>

<221> modified_base

<222> (243)

<223> a, t, c or g

<220>

<221> modified_base

<222> (263)

<223> a, t, c or g

<220>

<221> modified_base

<222> (284)

<223> a, t, c or g

<220>

<221> modified_base

<222> (389)

<223> a, t, c or g

<220>

<221> modified_base

<222> (397)

<223> a, t, c or g

<400> 430

ctggcaccaa	ggccccacac	gtcaccctgt	gacctcctgc	gccgaccccg	cccgaggtcc	60
tggccgttac	caccgaacgg	gcgagccggg	agtctggtn	gcatcgaaca	aanagcaagg	120
tgcattggcg	gagttgttcc	gccacttcgt	cgatgacggg	gtcnatccat	tcgaggtccg	180
tcgcccgcgt	ggctnagtgg	cggtcacact	ccaggtactc	gacctcacag	acnaaaggac	240
tcnatcccat	ctaggtgtgg	acnaaacaga	tcttctgtcc	gacnactaca	ccaccaccca	300
ggccatcgcc	gccgcccgcg	atgccaactt	cgacgccgta	ctggcccccg	cgggggggcg	360
tccccggttg	tcaacacttg	ccgtgttcnt	tcacgcncgt	ccccacatcc	aaccccaacg	420

<210> 431

<211> 130

<212> DNA

<213> Mycobacterium tuberculosis

<400> 431

gttcttgggc	ccatgcggag	gtatcgccgt	ttccaccacg	cggtcggggg	ggcgttgcat	60
tagctcaccg	atggtgcgct	tgtgcaggcc	gccgggatac	cccgagtgcc	ggtaaaccat	120
cttgtgctgc						130

<210> 432

<211> 215

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (81)

<223> a, t, c or g

53941100

<220>
<221> modified_base
<222> (84)
<223> a, t, c or g

<400> 432
caataactcaa gcttggcggtg ccgtttccaac ccgaattggc tttcggcgcc atcgggtgagg 60
acggcggtgcg ggtgctcaac nacnacgtcg tccgcgggac acacctcgat gctgccgcca 120
tggacgcggt cgaacgcaag cagctgatcg agctacaacg ccgcgcggaa cgcttccgcc 180
gcggggcggtga ccgcatcccc ttgaccgggc ggatc 215

<210> 433
<211> 360
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (2)
<223> a, t, c or g

<400> 433
cntcatgatg atcatcaccc gaagtgtggt agccgcagtg gttatcgtgg gtaccgtcgt 60
gctttccatg ggcgcctctt tcgggctttc cgtattggtc tggcaggaca ttctgggtat 120
cgagttgtac tggatggtgt tggcgatgac ggtgattcctg ctcttggcgg tgggatccga 180
ctacaatctg ctgctgattt cccggttgaa agaggaaatt ggggccggat tgaacaccgg 240
aattatccgt gccatggctg gtaccggggg agtgggtgacg gctgccggca tgggtgttcgc 300
cgttaccatg tcgttgtttg tgttcagcga tttgcgaatt attggtcaga tcggtaccac 360

<210> 434
<211> 265
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (26)
<223> a, t, c or g

<220>
<221> modified_base
<222> (135)
<223> a, t, c or g

<220>
<221> modified_base
<222> (176)..(177)
<223> a, t, c or g

<220>
<221> modified_base
<222> (199)
<223> a, t, c or g

<220>
<221> modified_base
<222> (263)
<223> a, t, c or g

<400> 434
ataactcaagc ttttacggtg atcgcnatc acctggttca tgaactggaa gcagcgcagc 60

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gcttcctttt cggccgcaac atgagccagc ctctcgtcgg cggtcgggtg caggtgctcg 120
ggcagctcgg ccgcnacagc cgcctgacct tgaaaccagc ttccatatcc cgcgannaac 180
gacgccagtc cgctacgtna cccctccgct actgtccatg gacaacagcg cgttctccac 240
cgaccgggcc cgggtgtggg gtntt 265
```

<210> 435
 <211> 264
 <212> DNA
 <213> Mycobacterium tuberculosis

```
<400> 435
gctggtagag tcgctgaccg gtgcaggttt cgacaatgtg gtgccgggtc ggcggctacg 60
tgccatcgag acactggcgc aggctatcgc acccgttatc ggctacgagc aaatcgcggt 120
atgcgttctt gagcatgagt cggcgaccgt cgtcatggtc gacaccacg acggaaagac 180
gcagatcgcc gtcaagcatg tgtgcccgcg attatcagga ctgacctcct ggctgaccgg 240
catgtttggt cgcgatgcct ggcg 264
```

<210> 436
 <211> 335
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (26)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (224)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (254)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (261)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (286)
 <223> a, t, c or g

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<400> 436
gctttccgcc gatacccgcc atgtcncgca catccaggac ttctgggggg atccgctgac 60
agcggcggga tcccaaagtg cggatgatcg ggccgcctac gtcgtggtgt acctcgtcgg 120
taacaacgaa accgaagcgt atgactcggc ccacgcggtg cggcacatgg tggacaccac 180
accgccaccg caggggtga aggcctatgt caccgggtcc gancactca atgccgacca 240
ggccgaggcc gganacaaaa ntatcgctaa ggtcaccgcg atcacnagca tggatgatcg 300
agcaatgttg ctagtgatct atcgtccgt aatta 335
```

<210> 437
 <211> 304
 <212> DNA
 <213> Mycobacterium tuberculosis

53941100

<220>
<221> modified_base
<222> (250)
<223> a, t, c or g

<400> 437
cttccaaccc gaattggctt tcggcgccat cggtgaggac ggcgtgcggg tgctcaacga 60
cgacgtcgtc cgcgggacac acctcgatgc tgccgccatg gacgcggtcg aacgcaagca 120
gctgatcgag ctacaacgcc gcgcggaacg cttccgccgc gggcgtgacc gcatcccgtt 180
gaccgggicgg atcgcggtga tcgtcgatga cggcatcgcc accggagcga cggccaaggc 240
ggcgtgccan gtcgcccggg cgcacggtgc ggacaagggtg gtgctggcgg tcccgatcgg 300
ccca 304

<210> 438
<211> 223
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (136)
<223> a, t, c or g

<220>
<221> modified_base
<222> (158)
<223> a, t, c or g

<220>
<221> modified_base
<222> (203)
<223> a, t, c or g

<400> 438
tactcaagct tcgcgagatc cggatggcac tcacgctgga caagaccttc acaaaatctg 60
aaatcctgac ccgatacttg aacctggtct cgttcggcaa taactcgttc ggcgtgcagg 120
acgcggcgca aacgtncttc ggcataacg cgtccganct gaattggcag caagcggcgc 180
tgctggccgg catggtgcaa tcnaccagca cgctcaaccc gta 223

<210> 439
<211> 263
<212> DNA
<213> Mycobacterium tuberculosis

<400> 439
cccacgactt tctcctcgat cagttggatt tgtacgaaga ggcaacgaaa gcagtgatcc 60
tcgggatggg cgacgcctac atcgacccgc cgttcacgcc gcacagcctg ctagatgcgc 120
tgggcgagca ggtccacag ttcgccgcta aggcacggcg tctgttcccg tccggatcgc 180
cattcggcct cggcgtcctg ctccattcg atcaataggg ctggcagctc cgtcggcagg 240
ggcctacgcc tcaccccgtc acg 263

<210> 440
<211> 301
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (60)
<223> a, t, c or g

<220>
 <221> modified_base
 <222> (109)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (111)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (174)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (179)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (226)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (260)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (264)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (273)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (298)
 <223> a, t, c or g

<400> 440
 ctcaagctta tgcgcgccgg ccgaggtctg ctcacggcaa cccctgaagt ttaggggacn 60
 acctactcag cgcaaaattt cgctaattgt agtccgcccc accaggggna natcaaccca 120
 tgtcgatcat gatctacccg gataccggat tggcggtagc gccacgac gtcaaaatnt 180
 ccgcctgaat catcggatag ctgatccggc gtcaacgcgt ttganttca ccgcgcaaca 240
 gccgccaggc cggcccgc anccgatc tcntcgggcc gcatgggccc caatcttntc 300
 g 301

<210> 441
 <211> 90
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 441
 gtgtgtggtg gaacccatct gagcagtgtg ccaaaccggg gcagacagct cccaattgac 60
 gtgagcccg ctaattgctg ggtaagcgtc 90

53941100

<210> 442
<211> 183
<212> DNA
<213> Mycobacterium tuberculosis

<400> 442
ctttacactt cctgcatccg gctcgtatgt tgtgtggaat tgtgagcggg taacaatttc 60
acacaggaaa cagctatgac catgattacg ccaagctatt taggtgacac tatagaatac 120
tcaagccttg gcgtgacggc caccggggcc actccgcacc atctgtaccc gaccaagatc 180
tac 183

<210> 443
<211> 348
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (94)
<223> a, t, c or g

<400> 443
caggcatgca agctttagct gcccgaatgc gtcaccccga tgcgcccaga tcggggccttc 60
gcagataaag cacgaacagg cgggcaaaac gtcnatctcg gagccggaag ggcaatcagc 120
cgaccgtcga cgaacgacac cggcgagacc acttaggcag tgacggccgg cccgaacatt 180
acgcgctcgt tgattaggcg ttcggtctcg tccgcggtca tgccgagcag cttgcggcag 240
atctgaacgc tgtcctgtcc gggcagcggc gccgggcggt ggggtgcctg cccgaatgtg 300
acgaaacgga gccggaccgg tctcggcggg ccgcggacgg cgatccgc 348

<210> 444
<211> 335
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (2)
<223> a, t, c or g

<220>
<221> modified_base
<222> (43)
<223> a, t, c or g

<220>
<221> modified_base
<222> (84)
<223> a, t, c or g

<220>
<221> modified_base
<222> (130)
<223> a, t, c or g

<220>
<221> modified_base
<222> (132)
<223> a, t, c or g

<220>
 <221> modified_base
 <222> (203)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (280)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (291)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (309)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (313)
 <223> a, t, c or g

<400> 444
 cncaagcttg cggatgttac ccctgacagc ctgaactatg tcnaaacaca cggcaccgga 60
 acggtgttgg gggaccccat cganttcgag tcgctggcgg ccacttatgg cctgggtaaa 120
 ggccagggcn anagcccgtg cgcattgggg tcggtcaaaa ccaacatcgg ccacctggag 180
 gcggccgccc gtgtggctgg atncatcaag gcggtgctgg cggtgcaacg tgggcacatt 240
 ccccgcaact tgcacttcac ccggtggaac ccggccatcn acgcgtcggc nacgcggctg 300
 ttcgtgccna ccnaaaaccc cccgtggccg gcggc 335

<210> 445
 <211> 289
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (155)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (212)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (249)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (251)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (289)
 <223> a, t, c or g

53941100

<400> 445
ggaaccggtg accagatcag ctcgtcgacc tctactgccgg ggggtgaattc cccaccggtg 60
ctgcgcgctg cccagtagtg caccttcttg acgcctcgaa aaggggagtc ggtcgggtag 120
gtcaccgtca ggagccgcct acccagggtg gcgcnatagc cggctctctc gagtatctcc 180
cgcaccgccc ccaccggtgc ggtctcaccc anatccactt tgcccttggg cagcgaccag 240
tcgtcgtanc nggggcggtg aatgacaacg atctcgaccg gcccttccn 289

<210> 446
<211> 263
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (33)
<223> a, t, c or g

<400> 446
tactcaagct tcagaacagg cctgtttgtg gcncacccgg ctcgccgagt tctgcacgca 60
ccgcctcaag tgcggcccgc accgccggca tctcccggtc acgcagggcc gcggcccgcg 120
ccgcagcgac ggcgtgttcg cgcagttcgc cgtcaatgat gctgacctga tcggccaecc 180
gggcgttctc ggcgtcgtcg cgttactaa tcgcggtgct cagcagcgtc tcgacagcca 240
ccaccgagt ggcgaccagc tgc 263

<210> 447
<211> 279
<212> DNA
<213> Mycobacterium tuberculosis

<400> 447
taatgtcttg ccaacgtcac cacaatcgcg atgaattcaa tcatgccgcc cagggcgggc 60
aaccgaatgg tggccgcgag cggcagctcg atcgcagcgc ggaggttgcc ggccgccagt 120
tgattcacga acaggggtgag gtcataggcg ggcaggatag tgacgaaggc aagacctata 180
tctgccgtcg gaagaagaat cgagtagccg gtcgacacaa cggaagcgaa agtgtccgcg 240
atgttgatga gcgtcgccgg ttgtggcggc ggtggcggc 279

<210> 448
<211> 295
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (136)
<223> a, t, c or g

<220>
<221> modified_base
<222> (268)..(269)
<223> a, t, c or g

<400> 448
tactcaagct ttcgtcagtt catcgcgcca gcagaccaac aagagcatcg ggacatacgg 60
agtcaactac ccggccaacg gtgatttctt ggccgcccgt gacggcgcca acgacgccag 120
cgaccacatt cagcanatgg ccagcgcgtg ccggggccag aggttggtgc tcggcggtta 180
ctcccagggt gcggccgtga tcgacatcgt caccgcccga ccaactgccc gcctcgggtt 240
cacgcagccg ttgccgcccg cagcgganna tcacatcgcc gcgatcgccc tgttc 295

53941100

<210> 449
<211> 280
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (25)
<223> a, t, c or g

<220>
<221> modified_base
<222> (33)
<223> a, t, c or g

<400> 449
ccacccgtgt aatttgggat gggcnaaaag gcnaagcacc gcgtggccac gaacgccggg 60
agggacaatc tcgggcggct agggcttctc gcgggaaggc ccgaacgtac ggcgtttcaa 120
cacgtcgcgt cgccctccga ccgcgaacat tcggggatgg cagcaacctg gtagcaccct 180
ggccggggcga tgatctgcag cgtcgccgcg ggtagtcgcc gcccgggcgg ctacagtctg 240
aaacgcgatg accatcgatg tgtggatgca gcatccgacg 280

<210> 450
<211> 320
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (28)
<223> a, t, c or g

<220>
<221> modified_base
<222> (37)
<223> a, t, c or g

<220>
<221> modified_base
<222> (57)
<223> a, t, c or g

<220>
<221> modified_base
<222> (67)
<223> a, t, c or g

<220>
<221> modified_base
<222> (87)
<223> a, t, c or g

<220>
<221> modified_base
<222> (112)
<223> a, t, c or g

<220>
<221> modified_base
<222> (122)
<223> a, t, c or g

<220>
 <221> modified_base
 <222> (140)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (176)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (233)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (295)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (312)
 <223> a, t, c or g

<400> 450
 tcaagcttta gctgcccga tccgtcancc cgatgcnccc agatcggggc ttcgcanata 60
 aagcacnaac aggcgggcaa aacgtcnatc tcggagccgg aagggcaatc anccgaccgt 120
 cnacaaacga caccggcgan accacttagg cagtgcggc cggcccgaac attacncgct 180
 cgttgattag gcgttcggtc tcgtccgcgg tcatgccgag cagcttgccg canatctgaa 240
 cgctgtcctg tccgggcagc ggcgccgggc gttgggggtgc ctgcggaatg tgacnaaacg 300
 gagccggacc cntctcggcg 320

<210> 451
 <211> 203
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (22)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (28)..(29)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (35)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (68)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (167)
 <223> a, t, c or g

53941100

<220>
<221> modified_base
<222> (173)
<223> a, t, c or g

<400> 451
ccggggccac tccgcacaat cngtaccnna ccaanatcta caccatcgaa tacgacggcg 60
tcgccgantt tccgcggtac ccgctcaact ttgtgtcgac cctcaacgcc attgccggca 120
cctactacgt gcactccaac tacttcatcc tgacgccgga acaaatngac gcntcgggtc 180
cgctgaccaa tacggtcggc ccc 203

<210> 452
<211> 287
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (1)
<223> a, t, c or g

<220>
<221> modified_base
<222> (23)
<223> a, t, c or g

<220>
<221> modified_base
<222> (130)
<223> a, t, c or g

<220>
<221> modified_base
<222> (193)
<223> a, t, c or g

<220>
<221> modified_base
<222> (236)
<223> a, t, c or g

<220>
<221> modified_base
<222> (244)
<223> a, t, c or g

<400> 452
nctggccttt ggtccacact aanacaatac tcaagcttcc ggccgcagag ccgccaactc 60
acgatatcgt taaccgatat cccgagccga tagctggcgg gctcgggtgg tggccagcgg 120
cgctgcgaac aaaggtgtga ccgtcatgaa acagacacca ccggcggccg tcggccgctg 180
tcacctgctc ganatctcag catccgcagc cgggtgtgatc gcgctttcgg cgtgtngtgg 240
gtcnccgccc gagcccggca aaggccggcc cgacacaacc ccggaac 287

<210> 453
<211> 272
<212> DNA
<213> Mycobacterium tuberculosis

<400> 453
catctgcccc ccacacggac cgcggtgcgg acgcggctga cgcgcctggt ggtcagcatc 60

53941100

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gtggccggtc tgctgttgta tgccagcttc ccgccgcgca actgctggtg ggcggcggtg 120
gttgcgctcg cattgctggc ctgggtgctg acccaccgcg cgacgacacc ggtgggtggg 180
ctgggctacg gcctgctatt cggcctggtg ttctacgtct cgttgttgcc gtggatcggc 240
gagctggttg gccccgggcc ctggttggca ct 272
```

<210> 454
<211> 364
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (103)
<223> a, t, c or g

<220>
<221> modified_base
<222> (127)
<223> a, t, c or g

<220>
<221> modified_base
<222> (257)
<223> a, t, c or g

<220>
<221> modified_base
<222> (279)
<223> a, t, c or g

<220>
<221> modified_base
<222> (304)
<223> a, t, c or g

<220>
<221> modified_base
<222> (319)
<223> a, t, c or g

<220>
<221> modified_base
<222> (321)
<223> a, t, c or g

<220>
<221> modified_base
<222> (324)
<223> a, t, c or g

<220>
<221> modified_base
<222> (351)
<223> a, t, c or g

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<400> 454
gacaatactc aagcttgact ggccaccac cggcatgacc accgacaggc ccgactggtc 60
gtaccactcg aacgcccggg tgttgatgtc ccagccgctg aantcgtcct gcgcgcgcag 120
gccgtcnaac aggtacaggg cgggcgaatt ggcaccacca ctttgggaatt ggaccttgat 180
gtcacggccc atcgacggcg acggcacctg caggtactcc accggcaagc ccggccggga 240
aaatgcccc gcggtcnccg tgccaccgac ggcgccganc aaacccgaca ctagggccgc 300
gccnacggcc ccgaccacna ntcnacgcga catacccgtg acggcgccac naaccctgtc 360
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aaca

364

<210> 455
 <211> 360
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (25)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (50)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (153)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (272)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (329)
 <223> a, t, c or g

<400> 455
 cctccaactc ggcggggaag cgacnccagc ctaccgagct tggagtccan gacgccagcg 60
 gcggcgctcgg tctgcgtcgt ggtgccgccg gggtggcggt ggctggcaac gatctccacc 120
 cagccgggtcg ggttacccac gatctcggca tanacgcggg ccgaggccgg tgcgataccg 180
 taattgcgtca attgggacgc ggttgtgcat tcggctagct cggttgccac acccgtcagg 240
 ggttcgacgt tggcgggttc ggcgggcccc ancaccgctg tcaccatgcc cgccaagccg 300
 acctgcggcg ccaccaactg cagcaccanc atgtcgccgt cgcgcgccgc gatcacatgg 360

<210> 456
 <211> 311
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (30)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (51)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (58)
 <223> a, t, c or g

<220>

<221> modified_base
 <222> (85)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (99)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (127)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (242)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (277)
 <223> a, t, c or g

<400> 456
 ctcaagcttt ttgagcgtcg cgcggggcan cttcgccggc aattctacta ncgagaantc 60
 tggcccgata cggatctgac cgaantcgct gcggtgcanc ccaccctcat tggcgaatggc 120
 gccgacnatg gcgcctggac cgatcttgtg ccgcttgccg acggcgacgc ggtaggtggg 180
 caagtccggg ctacgcttgg gcctttgcgg acggtcccga cgctgggtcg gggtgcgccg 240
 cnaaagcggc gggctcgggtg ccatcaggaa tgcctcnccg ccgcggcact gcacggccag 300
 tgccgcggcg a 311

<210> 457
 <211> 288
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (2)
 <223> a, t, c or g

<400> 457
 cnccagcttg attggtctgg ttgcattggc cagctgcgcg agcctggctc acttcaacta 60
 cgacgaccgc aaacaattgc cgccttcgga tccgagttcg gttgggtacg cggcaatgga 120
 gcaccatttc tcggtgaatc agactattcc tgagtacttg atcatccact ctgcacacga 180
 cctgcgaacc ccgcgcggcc ttgccgacct ggagcagctg gcgcaacgtg tgagccagat 240
 cccaggcggt gccatggttc gcggtgtgac ccggccaaac ggggaaac 288

<210> 458
 <211> 256
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (66)
 <223> a, t, c or g

<220>
 <221> modified_base

<222> (206)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (240)
 <223> a, t, c or g

<400> 458
 caataactcaa gcttgactgg gcccgcacct tcggcgccac ccacaccgtc aacgcccgcg 60
 aagtcnactg cgtccaggcc atcggcgcc tcacggatgg attcggcgcg gacgtggtga 120
 tcgacgccgt cggccgaccg gaaacctacc agcaggcctt ctacgcccgc gatctcgccg 180
 gaaccgttgt gctgggtggg gttccnactg cggacatg cctggacatg ccgctggtcn 240
 acttcttctc tcacgg 256

<210> 459
 <211> 327
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (166)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (169)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (173)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (175)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (219)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (230)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (307)
 <223> a, t, c or g

<400> 459
 tcgacggttt ggcggcctta aatgcactga ggtcgtcaat tgaccccaca gcggaaatgc 60
 cgactattcg caggcctcct tcgccttggc tgccggagag gggctccgcg ggaaccgcat 120
 gcagggtatat gacctcggtt tctcgggtgc taccgcgtgc ctgtntang atnancctcg 180
 cgttgggaatt gtccagcccg cccaattcat cgagcgcana ttcgtacacn tggccggcgg 240
 cgacatacgc ttcaccgtgg atctgctcca caggaccgc cctgtcggga tcctgctcac 300
 gggtaangga acttacgtgg cactcgg 327

53941100

<210> 460
<211> 100
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (41)
<223> a, t, c or g

<400> 460
gaccacgcca ggctaatacac gtgacgctac cgaataccct ncctagtggg gcaggctccc 60
gctggaaatg gccctgtacc aactcgcgca ccggtgccag 100

<210> 461
<211> 114
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (114)
<223> a, t, c or g

<400> 461
cggcacccga cccctttgag ccgtccgccg tggccgcggt ggaactggcc gacgagggac 60
tgatcgtgct gggcaaattg gtcgatggca cgctggccgc cgatctgaag gtcn 114

<210> 462
<211> 287
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (174)
<223> a, t, c or g

<220>
<221> modified_base
<222> (177)..(178)
<223> a, t, c or g

<220>
<221> modified_base
<222> (265)
<223> a, t, c or g

<220>
<221> modified_base
<222> (267)
<223> a, t, c or g

<400> 462
ctcaagcttg ccgttacccc gacttccgga gggacaccat gagcaccgcc agccgagcac 60
gaggccaaac tccgccgacg caggccggtt ggacttgtcg tgctggacaa ggggttttagc 120
cgccgaagca gtgacgtaca tcggcgaaaa gcagttcgcc tgtcgaccga cggngcnac 180
cgtgaggcta gggaagcgag gagcacatgg ccgccgaccc gcaatgtaca cgctgcaagc 240
aaaccatcga acccggatgg ctatncntca ccgcccatcg ccgcggt 287

53941100

<210> 463
<211> 288
<212> DNA
<213> Mycobacterium tuberculosis

<400> 463
catgtcgcgc acatccagga cttctggggg gatccgctga cagcggcggg atcccaaagt 60
gcggatgatac gggccgccta cgctgtggtg tacctcgtcg gtaacaacga aaccgaagcg 120
tatgactcgg tccacgcggt gcggcacatg gtggacacca caccgccacc gcacggggtg 180
aaggcctatg tcaccggtcc ggcagcactc aatgccgacc aggccgaggc cggagacaaa 240
agtatcgcta aggtcaccgc gatcacgagc atggtgatcg cagcaatg 288

<210> 464
<211> 255
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (78)
<223> a, t, c or g

<220>
<221> modified_base
<222> (104)
<223> a, t, c or g

<400> 464
ataactcaagc ttcggtacgg tggcggggccg tgctgtctggc cgcggtcgcg gcgtgctgcg 60
cctgcggtct cgtttacnag ctgcgcgtgc tgacactggc ggcnagcctg aacggcggcg 120
ggatcgtggc cacctccctg atcgtcgcgg gctacatagc cgcgctggga gcaggcgcct 180
tgctgatcaa gccgctactt gcacacgcgg ccatcgcgtt catcgccgtg gaggcggtgc 240
tgggcatcat cggcg 255

<210> 465
<211> 288
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (22)
<223> a, t, c or g

<400> 465
tgtcaagtcc tttcagatct cntttttatg acatgactgg agatctgtct agattgcagc 60
tcctgtgagc gtgggtaccg gattcaagcc ggtcgggtcac gccgcggtgg taccggcttt 120
gcggcagtg cgcgcctcga gttcggcgat cgcgcgcgaa gtgcgttcgc gcagcaagat 180
cgcgcccgta atgccggcga tgaccgcgat gaccagcgcg atccaggaga accgttccaa 240
ccagtgtctg gcggccatcc cggcgaagta gaccagtgcg gtggtgcc 288

<210> 466
<211> 224
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base

<222> (73)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (129)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (136)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (203)
 <223> a, t, c or g

<400> 466
 caataactcaa gcttcaaaac aggcctgttg tgggcgacc cggctcgccg agttctgcac 60
 gcaccgcctc aantgcggcc cgcaccgccg gcatctcccg gtcacgcagg gccgcggccc 120
 gcgccgcanc gacgngtgt tcgcgcagtt cgccgtcaat gatgctgacc tgatcgcca 180
 cccgggcgtt ctggcgctcg tcncgttcac taatcgcggt gctc 224

<210> 467
 <211> 320
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (24)..(25)
 <223> a, t, c or g

<400> 467
 tacgctggcg ctggagggag ccanntacaa catccacgcc aatgctcttg ccccgatcgc 60
 ggcgaccagg atgaccagg acatcctgcc gcccgaaagta ctggaaaagc tcacacccga 120
 gttcgtcgca ccggtggtgg cctacctgtg caccgaggag tgtgccgaca acgcatcggt 180
 gtacgtcgtc ggtggtggca aggtgcagcg agttgcgctg tttggcaacg acggcgccaa 240
 cttcgacaaa ccgccgtcgg tacaagatgt tgcggcgcgg tgggccgaga tcaccgatct 300
 gtccggtgcg aaaattgctg 320

<210> 468
 <211> 303
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (17)..(18)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (45)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (103)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (163)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (171)..(173)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (226)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (295)
 <223> a, t, c or g

<400> 468
 gcttttcccg tccgtcnncg ctcaaccgcg tgaggccgaa gcgngtggtt acgactccct 60
 gtttgtgatg gaccacttct accaactgcc catgttgagg acncccgacc agccgatgct 120
 ggaggcctac acggcccttg gtgcgctggc caccggcgacc gancggctgc nnntgggcgc 180
 gttggtgacc ggcaatacct accgcagccc gaccctgctg gcaaanatca tcaccacgct 240
 cgacgtggtt agcgccgggc gagcgatcct cggcattgga gccggttggt ttganctgga 300
 aca 303

<210> 469
 <211> 391
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (2)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (12)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (29)
 <223> a, t, c or g

<400> 469
 cngcttttta atggccttga cntgggcgng ccggccaccg gggccactcc gcacaatctg 60
 tacccgacca agatctacac catcgaatac gacggcgctc ccgactttcc gcggtacccg 120
 ctcaactttg tgtcgaccct caacgccatt gccggcacct actacgtgca ctccaactac 180
 ttcattcctga cgccggaaca aattgacgca gcggttccgc tgaccaatac ggtcgggtccc 240
 acgatgacct agtactacat cattcgacg gagaaacctgc cgctgctaga gccactgcga 300
 tcggtgccga tcgtggggaa cccactggcg aacctgggtc aaccaaactt gaaggtgatt 360
 gttaacctgg gctacggcga cccggcctat g 391

<210> 470
 <211> 343
 <212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (48)

<223> a, t, c or g

<220>

<221> modified_base

<222> (77)

<223> a, t, c or g

<220>

<221> modified_base

<222> (269)

<223> a, t, c or g

<220>

<221> modified_base

<222> (275)

<223> a, t, c or g

<220>

<221> modified_base

<222> (311)

<223> a, t, c or g

<400> 470

ctcaagcttg	ccgggagggg	gcatggccga	ctcggattta	cccaccangg	ggcgccaacg	60
cggtgtccgc	gccgtcnagc	tgaacgttgc	tgcccgcctg	gagaacctgg	cgctgctgcg	120
caccctggtc	ggcgccatcg	gcaccttcga	ggacctggat	ttcgacgccg	tgcccgacct	180
gaggttggcg	gtggacgagg	tgtgcacccg	gttgattcgc	tcggccttgc	cggatgccac	240
cctgcgcctg	gtggtcgatc	cgcgaaaana	cgaanttggtg	gtggaggctt	ctgctgcctg	300
cgacaccac	nacgtggtgg	caccgggcag	ctttagctgg	cat		343

<210> 471

<211> 303

<212> DNA

<213> Mycobacterium tuberculosis

<400> 471

ccgacgccgt	cgtggccacc	aacaccgcga	ccagcaccgt	gacccggacc	gggggtgccgc	60
gcgaaccggt	cttggccaat	tgccgcggca	ccaagccgtc	gcgcgccatg	gcgaacagca	120
cgcggcattg	cccagcatc	aacaccatca	ccaccgtggt	aagcccggcc	agcgcgccga	180
cggagatgat	gccgctggcc	cagtacaccc	cgttggcctg	gaacgcggtg	gccagatttg	240
ccggcccgcg	gcccgggtacg	gtccgcagtt	gggtgtatgg	aaccatgccc	gacagcacca	300
ccg						303

<210> 472

<211> 264

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (3)

<223> a, t, c or g

<220>

<221> modified_base

<222> (177)

53941100

<223> a, t, c or g

<400> 472

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ttnactggcc tttggtccac actagacaat actcaagctt ccaggacatc gtcatcgcg 60
ccaaaaccgc gagctaggtc ggcatccggg aagcatcgcg acaccgtggc gccgagcgcc 120
gctgccggca ggccgattag gcgggcaaat tagcccgccg cggctcccgg ctccgantac 180
ggcgccccga atggcgtcac cggctggtta ccacgcttgc gcgcctgggc ggcggcctgc 240
cggatcaggt ggtaaatagcc gaca 264
```

<210> 473

<211> 280

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (1)

<223> a, t, c or g

<400> 473

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ngacgtcttc catccgcgcg tcgttttggc gggtttgcca cagcagcccg ccggtgacgg 60
cgacgatgct gggctggttg cggccctgcg ccaccgcggc ttgcatgctg gttggctgtc 120
ttgggacgat cccgaaatag tccacgcgga tctggtgatt ttgcgggcta cccgcgatta 180
ccccgcgcgg ctcgacgagt ttttggcctg gactacccgc gtggccaatc tgctgaactc 240
gcggccgggtg gtggcctgga atgtcgagcg ccgttaccta 280
```

<210> 474

<211> 153

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (17)

<223> a, t, c or g

<220>

<221> modified_base

<222> (23)

<223> a, t, c or g

<220>

<221> modified_base

<222> (52)

<223> a, t, c or g

<220>

<221> modified_base

<222> (112)

<223> a, t, c or g

<220>

<221> modified_base

<222> (143)

<223> a, t, c or g

<400> 474

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cttcctcctg agtaccnccc gtntactttg ggatgggtaa aaaggcgaat cnccgttttg 60
tcacgaacgc cgggagggac aatctcgggc ggctggggcc tctcgcggga angcccgaat 120
gtacggtgtc tcgacacttc ccntccccct ccg 153
```

<210> 475
 <211> 247
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (13)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (77)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (155)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (161)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (218)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (233)
 <223> a, t, c or g

<400> 475
 gagcatcggg acntacggag tcaactaccc ggccaacggt gatttcttgg ccgccgctga 60
 cggcgcgaac gacgccngcg accacattca gcagatggcc agcgcgtgcc gggccacgag 120
 gttggtgctc ggcggctact cccagggtgc ggccntgatc nacatcgta ccgccgcacc 180
 actgcccggc ctcgggttca cgcagccgtt gccgccnca gcggacgatc acntcgccgc 240
 gatcgcc 247

<210> 476
 <211> 264
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (10)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (24)..(25)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (123)
 <223> a, t, c or g

53941100

<220>
<221> modified_base
<222> (262)
<223> a, t, c or g

<400> 476
tactcatgan catcctttaa tcannngcttt gcgttttttt attaaatctt gcaattttact 60
gcaaagcaac aacaaaaatcg caaagtcac aaaaaaccgc aaagttgttt aaaataagag 120
cancactaca aaaggagata agaagagcac atacctcagt cacttattat cactagcgct 180
cgccgcagcc gtgtaaccga gcatagcgag cgaactggcg aggaagcaaa gaagaactgt 240
tctgtcagat agctcttacg cnca 264

<210> 477
<211> 264
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (23)
<223> a, t, c or g

<220>
<221> modified_base
<222> (64)
<223> a, t, c or g

<220>
<221> modified_base
<222> (67)
<223> a, t, c or g

<220>
<221> modified_base
<222> (112)
<223> a, t, c or g

<220>
<221> modified_base
<222> (135)
<223> a, t, c or g

<220>
<221> modified_base
<222> (137)
<223> a, t, c or g

<220>
<221> modified_base
<222> (176)
<223> a, t, c or g

<220>
<221> modified_base
<222> (178)
<223> a, t, c or g

<220>
<221> modified_base
<222> (184)
<223> a, t, c or g

53941100

<220>
<221> modified_base
<222> (205)
<223> a, t, c or g

<220>
<221> modified_base
<222> (231)
<223> a, t, c or g

<220>
<221> modified_base
<222> (263)
<223> a, t, c or g

<400> 477
ctcaagcttc aggtcaatgt gcnccaagcc ctgacgctgg ccgaccaggc caccgccgcc 60
gganacnctg ccaaggccac cgaataacaac aacgccgccg aggcgttcgc ancccagctg 120
gtgaccgccg agcanancgt caaaaacctc aagacgctgc atgaccaggc gcttancncc 180
gcancctcagg ccaagaaggc cgtcnaacga aatgcgatgg tgctgcacca naagatcgcc 240
gagcgaacca agctgctcag ccng 264

<210> 478
<211> 352
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (62)
<223> a, t, c or g

<400> 478
catggtggca ctgtagcgac gtgctgcaat caagggtcatg cccgactctg gtcagctcgg 60
anccgctgac accccgctaa ggctgctcag ctcgggtgcat tacctcaccg acggcgaact 120
ccccagctt tacgactatc cggatgacgg cacctggttg cgggcgaact tcatcatcag 180
cttggacggc ggcgctaccg tcgatggcac cagcggggcg atggccgggc ccggcgaccg 240
attcgtcttc aacctgttgc gtgaacttgc cgacgtcatc gtggtcggcg tgggcaccgt 300
gcgcattgag ggctactccg gcgtccggat gggtgtcgtc cagcgccagc ac 352

<210> 479
<211> 207
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (57)
<223> a, t, c or g

<220>
<221> modified_base
<222> (88)
<223> a, t, c or g

<220>
<221> modified_base
<222> (133)
<223> a, t, c or g

53941100

<220>
<221> modified_base
<222> (181)
<223> a, t, c or g

<400> 479
tactcaagct tgcgggtgat cgccttggtc aacggcaccg tgatcggatc ggggtcnacc 60
gcacaaatgg actggagctt cggcgaantc atcgccctatg cctcgcgggg ggtgacgctg 120
accccgggtg acntgttcgg ctccgggcacg gtgcccacct gcacgctcgt ctatcacctc 180
nggccaccgg aatcattccc gggctgg 207

<210> 480
<211> 256
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (6)
<223> a, t, c or g

<400> 480
gttgngcct cgtcggcgaa cagttctcgc acgatttccg gattagcggg actggtcacc 60
agttgggtat gcgggaaggc gctgacgttc gccgcgatta gctgtttgat ggacgcgggtg 120
gtgatgttct gatcacggaa ctggctgtaa tagcccaggg tcgccacgct ttcattccggg 180
cccggacccg gcgcaccgag cgtgtcgcgc aggtatgcga cgtgattttc gctgaagtcc 240
ccgtaccggg agaact 256

<210> 481
<211> 397
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (34)
<223> a, t, c or g

<400> 481
tgcttcggc tcgtatgttg tgtggaattg tgancggata acaatttcac acaggaaaca 60
gctatgacca tgattacgcc aagctattta ggtgacacta tagaatactc aagctccagg 120
tcaatgtgcg ccaagccctg acgtggccg accaggccac cgccgccgga gacgctgcct 180
ttgtcaccga atacaacaac gccgccgagg cgttcgcagc ccagctgggtg accgccgagc 240
agagcgtcga agacctcaag acgctgcatg accaggcgct tagcgcgcga gctcaggcca 300
agaatgccgt cgaacgaaat gcgatggtgc tgcggcataa gatcgccgag cgaaccaagc 360
tgctcagcca gctcgagcag gcgaagatgc acgagca 397

<210> 482
<211> 379
<212> DNA
<213> Mycobacterium tuberculosis

<400> 482
caggcatgca agcttcggag gcagaccctg gcatggtggc actgtagcga cgtgctgcaa 60
tcaaggatcat gcccgactct ggtcagctcg gagccgctga caccgcgcta aggctgctca 120
gctcggtgca ttacctcacc gacggcgaac tccccagct ttacgactat ccggatgacg 180
gcacctggtt gcgggcgaac ttcatcagca gcttggacgg cggcgctacc gtcgatggca 240
ccagcggggc gatggccggg cccggcgacc gattcgtctt caacctgttg cgtgaacttg 300
ccgacgtcat cgtggtcggc gtgggcaccg tgcgcattga aggctactcc ggcgtccgga 360
tggtgtcgt ccatcgcca 379

<210> 483
 <211> 264
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (125)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (216)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (230)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (244)
 <223> a, t, c or g

<400> 483
 tactcaagct tggggtggcg ctgtcggtcg gtgtgcttgg cggcgtcggg atcaacaccg 60
 cccacgaaat ggggcacaag aaggattcgc tggagcgggt gctgtccaaa atcaccctcg 120
 cccanacctg ctacgggcac ttctacatcg agcacaaccg tggccatcac gtccgggtgt 180
 ccacaccgga ggaccggcg tcggcgcggt tcggcnaaac gttgtgggan ttcctgcccc 240
 gcantgttat cggcggcttg cgct 264

<210> 484
 <211> 351
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (16)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (256)
 <223> a, t, c or g

<400> 484
 ggccatcgcc accgcncgcg ggcgaacgct caaaggcacc tactggcacc aaggcccccac 60
 acgtcaccct gtgacctcct gcgccgaccc cgcccaggt cctggccgtt accaccgaac 120
 gggcgagccg ggagtctggt acgcatcgaa caaagagcaa ggtgcatggg cggagttggt 180
 ccgccacttc gtcgatgacg gggtcgatcc attcgaggtc cgtcgccgcg tcggtcgagt 240
 ggcggtcaca ctccangtac tcgacctcac agacgagagg actcgatccc atctaggtgt 300
 ggacgaaaca gatcttctgt ccgacgacta caccaccacc caggccatcg c 351

<210> 485
 <211> 328
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (50)
<223> a, t, c or g

<220>
<221> modified_base
<222> (56)
<223> a, t, c or g

<220>
<221> modified_base
<222> (70)
<223> a, t, c or g

<220>
<221> modified_base
<222> (81)
<223> a, t, c or g

<220>
<221> modified_base
<222> (84)
<223> a, t, c or g

<220>
<221> modified_base
<222> (126)
<223> a, t, c or g

<220>
<221> modified_base
<222> (174)
<223> a, t, c or g

<220>
<221> modified_base
<222> (207)
<223> a, t, c or g

<220>
<221> modified_base
<222> (216)
<223> a, t, c or g

<220>
<221> modified_base
<222> (222)
<223> a, t, c or g

<220>
<221> modified_base
<222> (246)
<223> a, t, c or g

<220>
<221> modified_base
<222> (253)
<223> a, t, c or g

<220>
<221> modified_base

<222> (271)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (315)
 <223> a, t, c or g

```
<400> 485
gcttgcggtg gatcgcccttg gtcaacggca cctgtatcgg atcgggggtcn accgcncaga 60
tggactggan cttcggcgaa ntcntcgct atgcctcgcg ggggggtgacc ctgaccccgg 120
gtgacntgtt cggctcgggc acggtgcccc cctgcacgct cgtcaagcac ctchggccac 180
cggaatcatt cccgggctgg ctgcacnacg gcgacntggt cnccctccag gtcgaagggc 240
tgggcnaaac aangcagacc gtccggacaa ncggcactcc ttttccgttg gctcttcggc 300
cgaatccgga cgccnaaccc gaccggcg 328
```

<210> 486
 <211> 344
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (106)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (131)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (144)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (265)..(266)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (309)
 <223> a, t, c or g

```
<400> 486
gttctcgcac gatttccgga ttagcgggac tggtcaccag ttgggtatgc ggggaaggcgc 60
tgacgttcgc cgcgattagc tgtttgatgg acgcggtggt gatgtnctga tcacggaact 120
ggctgtaata ncccaggggc gccncgcttt catccgggac cggacccggc gcaccgagcg 180
tgtcgcgcag gtatgcgacg tgattttcgc tgaagtcccc gtacccggag aactcgaaca 240
cgctgaggcg ctcgtcaccg tcgtnnccggc gaccaagcgc ggcgagcaac tgcgcaaaat 300
cgtaagana ggtcgaatcg ttgaaattcg gcaccactg cacc 344
```

<210> 487
 <211> 285
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base

53941100

<222> (35)
<223> a, t, c or g

<220>
<221> modified_base
<222> (76)
<223> a, t, c or g

<220>
<221> modified_base
<222> (147)
<223> a, t, c or g

<220>
<221> modified_base
<222> (149)
<223> a, t, c or g

<220>
<221> modified_base
<222> (154)
<223> a, t, c or g

<220>
<221> modified_base
<222> (188)
<223> a, t, c or g

<220>
<221> modified_base
<222> (193)
<223> a, t, c or g

<220>
<221> modified_base
<222> (243)
<223> a, t, c or g

<220>
<221> modified_base
<222> (246)
<223> a, t, c or g

<220>
<221> modified_base
<222> (255)
<223> a, t, c or g

<400> 487
cacaagacaa tactcaagct tcaggtcaat gtgcnccaag ccctgacgct ggccgaccag 60
gccaccgccg ccgganacgc tgccaaggcc accgaataca acaacgccgc cgaggcggtc 120
gcagcccagc tggtgaccgc cgagcananc gtcnaaaacc tcaagacgct gcatgaccag 180
gcgcttancg ccncagctca ggccaagaag gccgtcgaac gaaatgcgat ggtgctgcag 240
canaanatcg ccgancgaac caagctgctc agccagctcg agcag 285

<210> 488
<211> 280
<212> DNA
<213> Mycobacterium tuberculosis

<400> 488
ccacccgtgc atggtggcac tgtagcgacg tgctgcaatc aaggtcatgc ccgactctgg 60

53941100

```
tcagctcgga gccgctgaca ccccgctaag gctgctcagc tcggtgcatt acctcaccga 120
cggcgaactc ccccgagcttt acgactatcc ggatgacggc acctgggtgc gggcgaactt 180
catcagcagc ttggacggcg gcgctaccgt cgatggcacc agcggggcga tggccgggcc 240
cggcgaccga ttcgtcttca acctgttgcg tgaacttgcc 280
```

<210> 489
<211> 160
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (18)
<223> a, t, c or g

<220>
<221> modified_base
<222> (117)
<223> a, t, c or g

<220>
<221> modified_base
<222> (137)
<223> a, t, c or g

<220>
<221> modified_base
<222> (148)
<223> a, t, c or g

```
<400> 489
gctttccgcc gataccncc atgtcccgc catccaggac ttctgggggg atccgctgac 60
agcggcgggg tcccaaagt cggatgatcg ggccgcctac gtcgtggtgt acctcgncgg 120
taacaacgaa accgaancgt atgactcngt ccacgcggtg 160
```

<210> 490
<211> 176
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (25)
<223> a, t, c or g

<220>
<221> modified_base
<222> (131)
<223> a, t, c or g

<220>
<221> modified_base
<222> (138)
<223> a, t, c or g

<220>
<221> modified_base
<222> (140)
<223> a, t, c or g

<220>

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<221> modified_base
<222> (151)
<223> a, t, c or g

<220>
<221> modified_base
<222> (169)
<223> a, t, c or g

<400> 490
caacccgant tggcttttcgg cgccntcggg gaggacggcg tgcgggtgct caacgacgac 60
gtcgtccgcg ggacacacct cgatgctgcc gccatggacg cggtcgaacg caagcagctg 120
atcgatctac nacgccngn ggaacgcttc ngccgcgggc gtgaccgcnt cccgtt 176

<210> 491
<211> 216
<212> DNA
<213> Mycobacterium tuberculosis

<400> 491
gggatgggca aaaaggcgaa gcaccgcgtg gccacgaacg ccgggagggga caatctcggg 60
cggctagggc ttctcgcggg aaggcccgaa cgtacggcgt ttcaacacgt cgcgtcgccc 120
tccgaccgcg aacattcggg gatggcagca acctggtagc accctggccg ggcgatgatc 180
tgccagcgtc cccgcgggta gtcgccgccc gggcgg 216

<210> 492
<211> 163
<212> DNA
<213> Mycobacterium tuberculosis

<400> 492
cagcagacca acaagagcat cgggacatac ggagtcaact acccggccaa cgggtgatttc 60
ttggccgccc ctgacggcgc gaacgacgcc agcgaccaca ttcagcagat ggccagcgcg 120
tgccgggcca cgaggttggg gctcggcgcc tactcccacg gtt 163

<210> 493
<211> 80
<212> DNA
<213> Mycobacterium tuberculosis

<400> 493
ctcaagcttg actggccacc caccggcatg accaccgaca ggcccgactg gtcgtaccac 60
tcgaacgccc ggggtgttga 80

<210> 494
<211> 248
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (30)
<223> a, t, c or g

<220>
<221> modified_base
<222> (186)..(189)
<223> a, t, c or g

53941100

```
<400> 494
ttggtgcccc gaatggcgag tcccatttan tgcgtgattt gtttgaacag cgacgaaacc 60
ggtgttgaaa atgtcgccctg ggtcggggat tccctctcca agcaagagta actggcccca 120
aataaagtta ctctgctgtct tgcaaagacc gctacccgat gccatttatg tgtttcctta 180
cgctcnnnnt tccggtgctgc catcattatc tgcacctttg cactgcacat tgagcttagc 240
agcgctcg                                     248
```

```
<210> 495
<211> 341
<212> DNA
<213> Mycobacterium tuberculosis
```

```
<220>
<221> modified_base
<222> (6)
<223> a, t, c or g
```

```
<220>
<221> modified_base
<222> (187)
<223> a, t, c or g
```

```
<400> 495
gaattngctt tcggcgccat cggcccagga ccgctgctgcgt gtgctcaacg acgacgtcgt 60
ccgcgggaca cacctcgatg ctgccgccat ggacgcggtc gaacgcaagc agctgatcga 120
gctacaacgc cgcgcggaac gcttccgccg cgggcgtgac cgcatcccgt tgaccgggcg 180
gatcgcngtg atcgtcgatg acggcatcgc caccggagcg acggccaagg cggcgtgcca 240
ggtcgcggcg gcgcacgggt cggacaagggt ggtgctggcg gtcccgatcg gcccagacga 300
catcgtggcg agattcgccg ggtacgccga tgaagtgggtg t                                     341
```

```
<210> 496
<211> 420
<212> DNA
<213> Mycobacterium tuberculosis
```

```
<220>
<221> modified_base
<222> (21)
<223> a, t, c or g
```

```
<220>
<221> modified_base
<222> (23)
<223> a, t, c or g
```

```
<220>
<221> modified_base
<222> (106)
<223> a, t, c or g
```

```
<220>
<221> modified_base
<222> (200)
<223> a, t, c or g
```

```
<220>
<221> modified_base
<222> (272)
<223> a, t, c or g
```

```
<220>
```

<221> modified_base
 <222> (355)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (362)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (413)
 <223> a, t, c or g

<400> 496
 taaagctttc gtcagttcat nnggcccccg gaccaacaaa agcatcggga catacggagt 60
 caactacccg gccaacgggtg atttcttggc cgccgctgac ggcgcnaacg acgccagcga 120
 ccacattcag cagatggcca gcgcgtgccg ggccacgagg ttggtgctcg gcgggtactc 180
 ccagggtgctg gccgtgatch acatcgtcac cgccgcacca ctgcccggcc tcgggttcac 240
 gcagccgttg ccgcccgcag cggacgatca cntcgccgcg atcgccctgt tcgggaatcc 300
 ctcgggccgc gctggcgggc tgatgagcgc cctgacccct caattcgggt ccaanaccat 360
 cnacctctgc aacaacggcg acccgatttg ttcggacggc aaccggtggc gancgcacct 420

<210> 497
 <211> 135
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (16)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (26)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (50)..(51)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (54)..(56)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (64)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (67)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (108)..(109)
 <223> a, t, c or g

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<220>
<221> modified_base
<222> (113)
<223> a, t, c or g

<220>
<221> modified_base
<222> (119)
<223> a, t, c or g

<220>
<221> modified_base
<222> (127)
<223> a, t, c or g

<400> 497
ccgggagggga ccacncggg cggctncggc ttctctccgg aaggttctan ngtnnnngcgt 60
ttcnacnctt cccgtcgccc tgcgaccgcc gaacattcgg ggtatggngg cancctgtna 120
gcattcnggc cgggc 135

<210> 498
<211> 277
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (103)
<223> a, t, c or g

<220>
<221> modified_base
<222> (254)
<223> a, t, c or g

<400> 498
ctcaagcttc cgcacagat cgctatagaa ccggtgcgcg tccccaccga gtggctgggc 60
gccttcagc acgacgtta ccgcgttatc ggaatcaaac tcnccgaaca cctgaccaac 120
gcgcttgatc gcctgaatcg atgcggcgtc gctgggggtc atcgataacc agtgtgcttt 180
tccgaccact tccagttgcg gtacggcgag attgacaaaag gcggtgaagc ccagccagag 240
caggacgatc accnccgcaa accggcggat ttgcccg 277

<210> 499
<211> 323
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (28)
<223> a, t, c or g

<220>
<221> modified_base
<222> (188)
<223> a, t, c or g

<220>
<221> modified_base
<222> (193)..(194)

<223> a, t, c or g

<220>

<221> modified_base

<222> (311)

<223> a, t, c or g

<220>

<221> modified_base

<222> (323)

<223> a, t, c or g

<400> 499

```
gcttggcagc ctgcggtctg gcgccctnga gctcttcgat ctggatctcc ggactcgaga 60
tgctcacttg cccggccgtg gacgtaccca ttgctggccgg gaccccagcg ccccagggtga 120
ccagcgagtt gggctgcacg ctgaccggcc cgctcggggtc gacgccggta acggtcagca 180
gctccgagtt ccnnctgac ccgaccgcag ctgccaatgc gcggctggca gccgacgtgg 240
atgtgccggg gcctagatcg cggggcagca gcgagaccgc gtcaccgacg gtcacacact 300
tgccgagttt nggcctgccg can 323
```

<210> 500

<211> 148

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (46)

<223> a, t, c or g

<400> 500

```
gcttccggct cgtatgttgt gtggaattgt gagcggataa caattncaca caggaaacag 60
ctatgacatc gattacgcca agctatctag gtgacactat agaataactca agcttgagcc 120
atcgggctat cagctggttg atgtcccc 148
```

<210> 501

<211> 242

<212> DNA

<213> Mycobacterium tuberculosis

<400> 501

```
caggcatgca agcttgctgt ctatcacatc cgaccaccaa ccgcccagcg gctcggcaga 60
acgcctccgc atatgggtcg acgaccagcg ggtcggactt ctgggctgcc agcgctcgcg 120
ccgtcgcgac aaacagcgcg gtcgaaccga cactccttgt gatgtccac ctatcacctt 180
cggtagcgac ccaatcgacc ctacgcggct agctcagccc cgatcttcca gagctccgcc 240
cg 242
```

<210> 502

<211> 230

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (122)

<223> a, t, c or g

<400> 502

```
gctttttgag cgctcgcgcg ggcggcttcc ccggcaattc tactagcgag aagtctggcc 60
cgatacggat ctgaccgaag tcgctgcggg gcagcccacc ctattggcg atggcgccga 120
```

53941100
 cnatggcgcc tggaccgatc ttgtgccgct tgccgacggc gacgcggtag gtggtcaatt 180
 ccgggtctacg ctitgggcctt tgcggacggt cccgacgctg gtcgcggttg 230

<210> 503
 <211> 235
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (4)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (36)
 <223> a, t, c or g

<400> 503
 cgancctggt cgacggctac ctgaatcacc ccgatnccac cgccgcggcg ttcgacgccg 60
 acagctggta ccgcaccggc gacgtcgcgg ttggtcgacgg cagtgggatg caccgcatcg 120
 tgggacgcga gtcggtcgac ttgatcaagt cgggtggata ccgggtcggc gccggtgaaa 180
 ttgaaacggt gctgctcggg catccggacg tggcgagggc ggcagtcgtc ggggt 235

<210> 504
 <211> 152
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (1)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (26)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (32)
 <223> a, t, c or g

<400> 504
 naagctttgt cacaccaagt gtttcnacca gncgtccat ccggcgaagt ggatactccc 60
 agcaggtagc aggtcgccac cacgtggtc agtgcgcggt cagctcgctt gcggcgctgc 120
 agcagccagt ccgggaaata gctgccctgg cg 152

<210> 505
 <211> 192
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (7)
 <223> a, t, c or g

<400> 505

53941100

cgctggncgc cggcgctggg ctgcggtaac caattaccac aacacttttc ggtagccgaa 60
cagcggcgcg taccagcgaa atggcacagc caccgcagtc gccgacatcc cgcgaaagatg 120
tggcagattt tcgtgcggtc gagccggcga aggcctagcg tcattgttgc ctggcaagggt 180
tgctgggccc gg 192

<210> 506
<211> 312
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (28)
<223> a, t, c or g

<220>
<221> modified_base
<222> (34)
<223> a, t, c or g

<220>
<221> modified_base
<222> (142)
<223> a, t, c or g

<220>
<221> modified_base
<222> (166)
<223> a, t, c or g

<220>
<221> modified_base
<222> (169)
<223> a, t, c or g

<220>
<221> modified_base
<222> (189)
<223> a, t, c or g

<400> 506
ctcaagcttc ttctgcccct tgccgttncg gatnacatcc cgcagcgact cggcttcggc 60
gtcgaatgctg aagtctcga tcagcttctg gatcgactcc gcgcccattg caccggtgaa 120
gtactcgccg tagcgggtcga cnagttcgcg gtagagggtt tcgtcnacna tcagctgctt 180
gggcgcccanc ttggtgaaag tgctccaaat gtcctccaac cgggtccagct cacgctgcgc 240
gcggtcacgg atctggcgca tctcgcgctc gccgccgtcg cgaacttgcg ccgcgcatcg 300
gccttggggc cc 312

<210> 507
<211> 296
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (23)
<223> a, t, c or g

<220>
<221> modified_base
<222> (30)

<223> a, t, c or g

<220>

<221> modified_base

<222> (184)

<223> a, t, c or g

<220>

<221> modified_base

<222> (186)

<223> a, t, c or g

<220>

<221> modified_base

<222> (189)

<223> a, t, c or g

<220>

<221> modified_base

<222> (275)

<223> a, t, c or g

<400> 507

gttcacacct	acctactatg	ccncaattcn	ccgacacggg	tggcatcaac	acgggcgata	60
aggtggaaat	cgctggggtg	aacgtcgggc	tgggtgcgctc	gctggcaatc	cgcggaacc	120
gcgtgttgat	cggattctcg	ttgcccgga	agacaatcgg	gatgcaaagc	cgggcagcaa	180
ttcncncna	caccattctt	ggccgtaaga	acctggagat	cgaaccccg	ggttcggagc	240
cgttgaaacc	caacggtttc	ctgccgttgg	cgcanaccac	tacgccatac	caaatc	296

<210> 508

<211> 208

<212> DNA

<213> Mycobacterium tuberculosis

<400> 508

ctcaagcttt	acgccgacgc	cggcctacac	aacaccaagg	aaacgattgc	ctactgccga	60
atcggggaac	ggtcctcgca	cacctgggtc	gtgttgccgg	aattactcgg	acacaaaaac	120
gtcaagaact	acgacggcag	ttggacagaa	tacggctccc	tgggtgggcgc	cccgatcgag	180
ttgggaagct	gatattgtgt	ctggaccc				208

<210> 509

<211> 278

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (5)

<223> a, t, c or g

<220>

<221> modified_base

<222> (30)

<223> a, t, c or g

<400> 509

tccncatgg	gataacgggt	ttagatttcn	acaacggcac	cgtgtttctc	aacaagccgg	60
tcatcagctg	ggccggcgac	aacggtatct	acttcacccg	ctttcgccc	tacaagaaaa	120
accactaggc	caccatcgag	tccaagaaca	accacctggt	ccgcaagtac	gcgttctact	180
accgctatga	caccgcccag	gaacgcgcgc	tgtctaaccc	gatgtggaag	ctggtcaacg	240
accgcctcaa	ctacctcacc	ccgaccatca	aaccgatc			278

<210> 510
 <211> 177
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (34)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (158)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (166)
 <223> a, t, c or g

<400> 510
 ctcaagcttg ggtgttgccg atcaccggaa gccncatgat cagccacggt tcgcgccgcc 60
 cggcatacgg cggcgtaccg atctccgctg catacacccg cgggtaatcg ccgacgggtgc 120
 cggttcgcga gccgaagggtg acaacgctga ttgaatcnag ttccangtcc agcgggt 177

<210> 511
 <211> 296
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (2)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (104)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (184)..(187)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (206)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (226)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (250)
 <223> a, t, c or g

53941100

<220>
<221> modified_base
<222> (283)
<223> a, t, c or g

<400> 511
tnaacagctc gcggcagccc acgacctgct gcgtcggatt gccggcggcg agatcaattc 60
caggcagctc ccggacaatg cggctctgct ggcccgcac gaangactcg aggtcacccc 120
ggtgcccggg gtcgtggtgc acctgccgat cgcacagggt ggcccacaac cggccgcttg 180
atgnnnngtc ggcaagcccg gcagtngcca aaccagcgt gatcangctc ggctcgcgag 240
ttcggcgaan aagtggctcg cctgatcacc taccatcggc cangatctgc gtgtca 296

<210> 512
<211> 223
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (5)
<223> a, t, c or g

<220>
<221> modified_base
<222> (30)
<223> a, t, c or g

<220>
<221> modified_base
<222> (145)
<223> a, t, c or g

<220>
<221> modified_base
<222> (148)
<223> a, t, c or g

<220>
<221> modified_base
<222> (160)
<223> a, t, c or g

<220>
<221> modified_base
<222> (223)
<223> a, t, c or g

<400> 512
gccanccggc ttggcgctga ctcccgttcn gcacatcata cgggtccccgg tactgtccaa 60
ctgcgccggg gcgctagcca aacgtcacga ctctcagtga tcccagttcg tgatccggcc 120
ggtggcgccg ctgcggcggg ggctnatnta cttcggactn attatctcat ccaaaggaca 180
ccgggcccggg ggctggaatc ccatggtgctg atcggccaca can 223

<210> 513
<211> 147
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (103)

53941100

<223> a, t, c or g

<400> 513
ccgacctggt atcttccgat agcgcgcggt gatatccggt ctgatctcct gcccttaacg 60
ccggatctca gcagggtcccc atgcaaagat ccgaggtgtc ccngatctag gggtcctcgt 120
cctccagatg atggagcaag tcggccc 147

<210> 514

<211> 149

<212> DNA

<213> Mycobacterium tuberculosis

<400> 514
ctcaagcttc ggctcaggcg gcgctgccgg taacgtcgct gaccgggtgca ggtttcgaca 60
atgtggtgcc gggtcggcgg ctacgtgcca tcaagacact ggcgaggct atcgacccc 120
ttatcggtca caaacaatc gcggtatgc 149

<210> 515

<211> 238

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (10)

<223> a, t, c or g

<400> 515
catcacctgn ttcatgaact ggaagcaccg cagcgcttcc ttttcggccg caacatgagc 60
cagcctctcg tcggcggtcg ggtgcagggt ctcgggcagc tcggccgcga cagccgcctg 120
accctgaaac cagcttccat atcccgcgac gaacgacgcc agtccgctac gtaaccctc 180
cgcgactgtc catggacaac agcgcgttct ccaccgaccg ggcccgggtg tgggggtgt 238

<210> 516

<211> 175

<212> DNA

<213> Mycobacterium tuberculosis

<400> 516
agcttagctt cccgccccgg caatagggct ccagctcatc cgggtgtgacc agataggggc 60
ccagggtgat accgtgtct ttgcccttg cctgtccgat gcgcagctgg ccctccagca 120
tctgcagggtc ccgtgcggac cagtcgttga aaatgggtata gccgatgac gaccg 175

<210> 517

<211> 144

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (3)

<223> a, t, c or g

<220>

<221> modified_base

<222> (16)

<223> a, t, c or g

<400> 517

53941100

ccngaacaga agcggngggt cctaccgcgg tgtgcggccg gcgcgatatc ggccttttta 60
ctaaccgaac ccgatgtggg ctccgatccg gcgcgcatgg catcgacggc gacgccgatc 120
gatgaccgcc aggcttacca cctt 144

<210> 518

<211> 174

<212> DNA

<213> Mycobacterium tuberculosis

<400> 518

ctcaagcttg cgcgactcga caagcattct tgacagttgt tttggctcgg catggtttagc 60
caaggttctg cgggtcccacc agatcatctt ggtccggtag cgctcgtccg ggtatgctgc 120
cgccgggatt ctcgctgcta ttactcccc cgaagaacgc caccggtcca gcgc 174

<210> 519

<211> 187

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (3)

<223> a, t, c or g

<400> 519

gcnaggcggg atagcttccc gtcgtaccgg cgaccgccag ccgagaagct cgttttccca 60
gtgttgctgg ggattctcac gctgctgctg agtgctgccc agaccgcttc cgcttcgggt 120
tacaacgagc cgcggggcta cgatcgtgcg acgctgaagt tgggtgttctc catggacttg 180
gggatgt 187

<210> 520

<211> 215

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (45)

<223> a, t, c or g

<400> 520

gtgtggaacc gtgagcggat aacaatttca cacaggaaac agctntgacc ttgattacgc 60
caagctatgt aggtgaggct atattaatac tcaagattgc ggtcgagcac atcggcccaa 120
gaaccgccga aggcacggcg gaacgcctgc ggcacatggg gcgacgacca gcgggtcggg 180
cttctgggct gtccagcccg atcgcgccgt cgcga 215

<210> 521

<211> 406

<212> DNA

<213> Mycobacterium tuberculosis

<400> 521

cactgtcagt acatatgcgc cgctcctcct catcgtgctg ctcggcatcg tcgccggcgg 60
tcatggcgtc accctaccca agccgaacgc gaaacgagaa cgtgttccat tattaggggtg 120
tgagcaccaa taccagattg ctccaccagga actcacgcag caccgggacg gatgtcagcc 180
accacgccca tctgggggtg tagcggggaa atacggctaa cgcggctccg gtgccggcag 240
cccagcgag accctcggcg gcggacacgg caaacaacga cgaccatag ttgttctttg 300
ccggatggcc gtgtttgcgg acatatcggg cggcggcgcg ggcggccggc aggtagtggc 360
tgaggcccat ctcgtgcccc ccgaatggcc ccagccaaac cgtgta 406

<210> 522
 <211> 180
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (86)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (174)
 <223> a, t, c or g

<400> 522
 ctcaagcttt tacggtgatc gcgcatcacc tggttcatga actggaagca gcgcagcgct 60
 tccttttcgg ccgcaacatg agccancctc tcgtcggcgg tcgggtgcag gtgctcgggc 120
 agctcggccg cgacagccgc ctgaccctga aaccagcttc catatcccgc gacnaacgac 180

<210> 523
 <211> 69
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (47)
 <223> a, t, c or g

<400> 523
 ctcagaagcc gctagctggt agagtcgctg accggtgcac gtggcgncaa tgtgcgctgc 60
 cggttcgcg 69

<210> 524
 <211> 168
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (111)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (114)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (157)
 <223> a, t, c or g

<400> 524
 ctcaagcttg cgctcatcaa gcgcgaacag cagggcggtc ggctgggtcgc catgacgggt 60
 gacgggacca atgacgcacc cgcgctcgcg caagccgatg tcggggtggc natnaatacc 120
 ggcaccagg cggccggga agccggcaac atggctcnatc tccactcc 168

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<210> 525
<211> 83
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (73)
<223> a, t, c or g

<400> 525
acttctatctt cgactgggtgt gctgtggcgc gatccgactg ccggcgtggt caaggccggc 60
cagttgtggg atnccacagg cac 83

<210> 526
<211> 173
<212> DNA
<213> Mycobacterium tuberculosis

<400> 526
gcttgtcgta ttccgtggca ctgtcagaca tatgcgccgc tcctcctcat cgctgcgctc 60
ggcatcgctg ccggcgggtca tggcgtcacc ctacccaagc cgaacgcgaa acgagaacgt 120
gttcattat tagggtgtga gcaccaatac cagattgctc accaggaact cac 173

<210> 527
<211> 38
<212> DNA
<213> Mycobacterium tuberculosis

<400> 527
cgatattcgt cggccgcggt gtctcgactg ggtcgcgt 38

<210> 528
<211> 136
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (96)
<223> a, t, c or g

<220>
<221> modified_base
<222> (136)
<223> a, t, c or g

<400> 528
gacctcggcc accaagccgg acgcgaccgt cgaggtggcg atccggcttg gcgtcgaccc 60
gcgtaaggca gaccacatgg tccgcggcac ggccancctg ccacacggca ctggtaagac 120
tgcccgcgtc gcggcn 136

<210> 529
<211> 114
<212> DNA
<213> Mycobacterium tuberculosis

<400> 529

53941100

ccggaagtct aggggacgac ctactcagcg caaaatgtcg ctaatgtgag tccgccccac 60
cagggcagat caacccatgt cgatgatgac ctaccggat accggattgg cggt 114

<210> 530
<211> 119
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (91)
<223> a, t, c or g

<400> 530
agcttcagtt cctccacgac gcgttcccaa atgaatttcc cgatcccaca atctcggttc 60
agatacaggt cgccataccc ctacttcgg naacgctggg cggattggcc ctgccgctg 119

<210> 531
<211> 99
<212> DNA
<213> Mycobacterium tuberculosis

<400> 531
ccgcctacgg gtcgaacatg catcccgaga ccgatgctcg agcgcgcacc ccactcgccg 60
atggccggaa ccggctgggt acccggggtg cggctgacc 99

<210> 532
<211> 308
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (141)
<223> a, t, c or g

<220>
<221> modified_base
<222> (147)
<223> a, t, c or g

<220>
<221> modified_base
<222> (308)
<223> a, t, c or g

<400> 532
gcggctgggt acgactccct gtttgtgatg gaccatttct accaactgcc catgttgggg 60
acgcccagacc agccgatgct ggaggcctac acggcccttg gtgctgctggc cacggcgacc 120
gagcggctgc aactgggcgc nttggtnacc ggcaatacct accgcagccc gaccctgctg 180
gcaaagatca tcaccacgct cgacgtgggt agcgccggtc gagcgatcct cggcattgga 240
gccggttggt ttgagctgga acaccgccag ctcggcttcg agttcggcac tttcagtgac 300
cggttcac 308

<210> 533
<211> 328
<212> DNA
<213> Mycobacterium tuberculosis

53941100

<220>
<221> modified_base
<222> (31)
<223> a, t, c or g

<220>
<221> modified_base
<222> (185)
<223> a, t, c or g

<220>
<221> modified_base
<222> (187)..(188)
<223> a, t, c or g

<400> 533
gcctttccgc acaatctgta ccccaggacc ntctaaaaaa tcgaatacga cggcgtcgc 60
gactttccgc ggtacccgct caactttgtg tcgaccctca acgccattgc cggcacctac 120
tacgtgcact ccaactactt catcctgacg ccggaacaaa ttgacgcagc ggttccgctg 180
accantnntg tcggtccac gatgaccag tactacatca ttcgcacgga gaacctgccg 240
ctgctagagc cactgcgatc ggtgccgatc gtggggaacc cactggcgaa cctgggtcaa 300
ccaaactga aggtgattgt taacctgg 328

<210> 534
<211> 75
<212> DNA
<213> Mycobacterium tuberculosis

<400> 534
gcagaccaac aagatgcac gggatcatat gccgtcaact acccgccaa cgggtgatttc 60
ttggccgccg cccac 75

<210> 535
<211> 319
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (35)
<223> a, t, c or g

<220>
<221> modified_base
<222> (49)
<223> a, t, c or g

<220>
<221> modified_base
<222> (88)
<223> a, t, c or g

<220>
<221> modified_base
<222> (93)
<223> a, t, c or g

<220>
<221> modified_base
<222> (135)
<223> a, t, c or g

<220>
 <221> modified_base
 <222> (228)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (299)
 <223> a, t, c or g

<400> 535
 ctcaagcttg ccaaagagac ctcgtccacc aagcnggacg cgaccgtcna ggtggcgatc 60
 cggcttgccg tccacccgcg taaggcanac canatggttc gcggcacggt caacctgcca 120
 cacggcactg gtaanactgc ccgcgtcgcg gtattcgcgg ttggtgaaaa ggccgatgct 180
 gccgttgccg cgggggcgga tgttgtcggg agtgacaatc tgatcganag gattcagggc 240
 ggctggctgg aattcgatgc cgcgatcgcg acaccggatc agatggccaa agtcggtcnc 300
 atcgctcggg tgctgggtc 319

<210> 536
 <211> 312
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (185)
 <223> a, t, c or g

<400> 536
 ccacggcgtg gatcaaggta ccggccggga tgttgcgcaa tggcaggttg ttgcccggct 60
 tgatgtcggc gttagcgccg gattccacca catccccttg cgaaagtccg ttgggtgcaa 120
 tgatgtagcg cttctcccca tcgagatagt ggagcaacgc aatccgtgcg gtacggttcg 180
 ggtcntactc gatgtgcgcg accttggcgt tgacaccatc tttgtcattg cggcgaaagt 240
 cgatcatccg gtaagcgcgc ttatgaccgc cgcctttgtg ccgggtggta atccggccat 300
 gcgcgttgcg tc 312

<210> 537
 <211> 105
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 537
 ggcggtgcg tcggcgagat gatcgcccgg tgccaccccg atccgtgcct cggtcagcgc 60
 caacgtgctt tccggtccgg cgaccacat gtcgcatgcg ccgac 105

<210> 538
 <211> 144
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (43)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (47)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (60)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (75)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (134)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (141)
 <223> a, t, c or g

<400> 538
 gcaatcgcct tggcggctcgc cgggttgatca ccggtgatca tcncggngcg gatgctcatn 60
 cggcgcattt cgtcnaatcg ttcccgtatg cccaccttga cgatgtcctt catatggacc 120
 acgccgatgg cccncgcgct nctg 144

<210> 539
 <211> 431
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 539
 ccggctcgta tgttgtgtgg aattgtgagc ggataacaat ttcacacagg aaacagctat 60
 gaccatgatt acgccaagct atttaggtga cactatagaa tactcaagct tccacatcgg 120
 tatgccaaag cattgcgccg ctatcgattt cgcgctggca tcgccaagggt ggacttcttg 180
 ctacgcgacg agatcccgtg gtcggatccg cggctgcggc gggctgcgac cctgcatctc 240
 ggcggcaccc gtgaccagat ggcgcgcgcc gaggcagacg tcgcggcggg acgccacgcc 300
 gactggccga tgggtgctggc cgcgtgtccg cacgtcgccg accccggccg catcgacgaa 360
 accggccgcc gtccgttctg gacctatgcc cacgtgccgt cgggggtccac gctcgacgcg 420
 accgagaccg t 431

<210> 540
 <211> 462
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 540
 cgcgtccacc gcagcgtgag attggtggcg ccattcgtcg tgggtgtagct gctgttgggc 60
 gcgtcgccgt attgtgcggg ccagccttgt gcggggggccg cttctaccca cgagtcggca 120
 cttccgcaac cgcccagctc gaccgcgatt acggcgggccg caacggccgc cggaaggcgt 180
 ctcgcaagcg ctttatcctt tcgcagggtt ccagatcctt ccgctacgtg ggtcgctcat 240
 cggcggggccc ggccgaatga gtacagggtga gggtaacccg tacaaatgaa gttggtcagt 300
 gctggccaac tgtgtaatgg ttgcccggct cgggtcacca cgtacattct ggcaaggcgg 360
 gcgagattcg gttcctcgcg tccttgggcg gtggcggttc ccggttgtcc gtgggcgtgt 420
 cgtgtacgtg gtgtaagtgt cgtgaactcc tcagtttggt ct 462

<210> 541
 <211> 307
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (206)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (212)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (298)
 <223> a, t, c or g

<400> 541
 ctcaagcttg cgctggatct ggcggctgag cctgttcttg ggcaacatgc cgagggatcg 60
 ccttttccac cacgcggtcg gggtagcggt gcattagctc accgatggtg cgcttggtgca 120
 ggccgcccggg ataccccag tgccggtaaa ccatcttggt ctgcagtttg tcgccgctga 180
 tggcgacctt gtcggcggtg atcacnatga cnaagtcacc gccatcgaca ttggggggcga 240
 acgtcggcctt gtgcttgccg cgcagcaggt tggccgcccgc gacggcaagg cggccaanca 300
 ccacgtc 307

<210> 542
 <211> 333
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (26)
 <223> a, t, c or g

<400> 542
 tttgggatgg gcaaaaaggc gaagcncgc gtggccacga acgccgggag ggacaatctc 60
 gggcggttag ggcttctcgc ggggaaggccc gaacgtacgg cgtttcaaca cgtcgcgtcg 120
 ccctccgacc gcgaacattc ggggatggca gcaacctggt agcacccttg ccgggcatg 180
 atctgcagcg tcgcccggg tagtcgccgc ccgggaggct acagtctgaa acgcgatgac 240
 catcgatgtg tggatgcagc atccgacgca acggttccta cacggcgata tgttcgccctc 300
 gctgcgccgg tggaccggtg ggtctatccc gga 333

<210> 543
 <211> 234
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (48)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (161)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (193)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (198)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (200)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (221)
 <223> a, t, c or g

<400> 543
 ctcaagcttc gtcataagac catggtgctc tttctttcac ccgtccanag tcgggggcat 60
 ccgcaccggc tcgcatcgca tcatcctccc acgacgggcc gctcatcagc ttggggccatt 120
 tcaatgtact tgatacccg cgctgcgggt aggccactgc nacaattcaa acacggtgtc 180
 acacggtgaa tantgtcnaa atgggctctg atcaaccgtc ncaaaccggg tttc 234

<210> 544
 <211> 440
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (427)
 <223> a, t, c or g

<400> 544
 gaattctgctg tgcaccgcta tgggttgctg cagcggctgg cgccgcacac cccactggcc 60
 cggtgtgttt cgccccgaac ccggatcatg gtgagcgaaa aggagattcg cctgttcgat 120
 gctgggattc gccaccgcga ggccatcgac cgattactcg ccaccgggtg gcgagaggtg 180
 ccgcagctccc gctccgtcga cgtctccgac gatccatccg gcttccgccg tcgggtggcg 240
 gtagccgtcg atgaaatcgc tgccggccgc taccacaagg tgattctgtc ccgttggtgc 300
 gaagtgcctt tcgcgatcga ctttccgttg acctaccggc tggggcgctc gcacaacacc 360
 ccggtgaggt cgtttttggt gcagttgggc ggaatccgtg ctctgggtta cagccccgaa 420
 ctcgtcncgg cggtgcgcgc 440

<210> 545
 <211> 425
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (30)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (57)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (111)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (180)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (185)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (197)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (288)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (356)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (359)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (385)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (402)
 <223> a, t, c or g

<400> 545
 gcagttggga atcgctctgc agcaaaccan tattctgctc gacgttcgag aggactnttt 60
 gaatggacgg atctacctgc cgcgcgacga gctggaccga ttaggcgtac ncctccgcct 120
 ggacgactcc ggggcactcg atgaccccga cggacggctc gcggcactgc tgcggttcan 180
 tgccnaccgc gccgcanact ggtattcgct gggactgcgg ctgattccac acctcgaccg 240
 ccgcagcgct gcctgctgtg cggccatgtc tggcatctac cgccgtcngc tcgccttgat 300
 cagaccatcg ccggcggtcg tctaccatcg gcgaatctct ctgttcggga ctgaanaang 360
 cccaagtggc ggcggcagca ctggnctctt cggtaacctg cngaccgccc attggaccgc 420
 taccg 425

<210> 546
 <211> 401
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (30)
 <223> a, t, c or g

<220>

<221> modified_base
 <222> (71)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (93)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (188)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (325)
 <223> a, t, c or g

<400> 546
 ttgatctgga cgtctgagac ggtgatcggn ccgaacctga attgtccggt aatgcccagc 60
 gcagaaagca nggtggtggc cggggcgggt aanccggcgt cggcggcacc gtcgaagtcg 120
 atgtggattg ccggaatggg gatgtccggc acggcgaagc cgtagttcgc ttgtcccgtg 180
 aggcccangt ggatgggggg aaggatcgtg gtgtccggga tgataatggg gccgatgccg 240
 ccggttgaag tccagtggat cgggaattcg ggaatcgtga tgccgacgtt caggccgaac 300
 aggccctcca agttgcctcg ccacnagatg ccgttgctga agttgcccga catgagggcg 360
 ccggtgtcca cattgcccga attggcgacg ccggtgttgg c 401

<210> 547
 <211> 391
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (23)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (52)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (91)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (163)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (174)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (265)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (301)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (304)
 <223> a, t, c or g

<400> 547
 cacgtaggcg ccgtagcataa atnactccgc cgcgcttcgc acatcctcgt ancgatcctt 60
 ggcgagcagg tcaaccgggc gctgcccgtc naggagccgg tttttggcgt gcagccactg 120
 gccgacacct cggggggtaa gcgaatccga gagcaggagg acnagggtcac gaanctgcgc 180
 cagccgggtcg taccgctcag ggcggatgtc gccgggtccgc caccgcgta ccgcccgatc 240
 ggacacctgt atgaccgcgg cgacntcgac ctgggtgacg ccgaagggtt tcagggcatc 300
 nacnatctcg ctggcctcga ccgcccgggc caggggtgacc gccatcgtgg ttcctccgca 360
 acttccggtt ctactaccgt aaacgctacc g 391

<210> 548
 <211> 369
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (52)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (80)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (89)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (266)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (356)
 <223> a, t, c or g

<400> 548
 cggggaacgg tcctcgcaca cctggttcgt gttgcgggaa ttactcggac ancaaaacgt 60
 caagaactac gacggcagtn ggacagaana cggctccctg gtgggcgccc cgatcgagtt 120
 gggaaagctga tatgtgctct ggacccaagc aaggactgac attgccggcc agcgtcgacc 180
 tggaaaaaaga aacggtgatc accggccgcg tagtggacgg tgacggccag gccgtgggcg 240
 gcgcgtttcg tgcggctgct gggacncctc cgacgagttc accgccggga ggtcgtcgcg 300
 tcggccaccg ggcgaatttc cggttcttcg ccgcgccccg ggatcctggg accgcnggcg 360
 cgcgctggt 369

<210> 549
 <211> 85

53941100

<212> DNA

<213> Mycobacterium tuberculosis

<400> 549

ctcaagcttt gtccgacaag cgttcccggg cggtcagcaa gcgaacgtcg gttggccac 60
tgcgggtcga tattgccgcc agggg 85

<210> 550

<211> 101

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (22)

<223> a, t, c or g

<400> 550

cgtcagcacg gcgacgtcgc gntacgccga gcagttacac aatcgctctg cagcaaacca 60
atattctgcg cgacgttcga gaggacttct tgattggact g 101

<210> 551

<211> 458

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (181)

<223> a, t, c or g

<400> 551

ctgcatccgg ctcgtatggt gtgtggaatt gtgagcggat aacaatttca cacaggaaac 60
agctatgacc atgattacgc caagctatgt aggtgacact atagaatact caagcttcgc 120
gcagcggcgg gttgacccgg ttcacgccgt catagctggc caatctggca tcgtcgcgat 180
ncatgtggtg gggggtgacc tcggcgggtga tcgaaatacc ctggtcctta tcccatttca 240
ggatttcgac ggtgcccgcg gccgacgcgt gacagatgtg caccggggcg ccggcgtcac 300
ggggcagcaa ggcgctcgcgg gcgacgatcg attcctcggc ggcccgcggc catcccgcga 360
ggcccagccg cgccgccatg ggtccctcgt gcgcgacggc gccgaccgtc agccgggggt 420
cctcggcggtg ctgggcgatc agcacgccc aaccgggtg 458

<210> 552

<211> 463

<212> DNA

<213> Mycobacterium tuberculosis

<400> 552

ccgacgcgca ctacgtgctg gtgtccaccc gcgacccgca ccggcacgag ctacgcagct 60
accgcatcgt cgatggcgct gtcaccgagg aacctgtcaa tgtcgtcgag cagtactgaa 120
ccgttccgag aaaggccagc atgaacgtca ccgtatccat tccgaccatc ctgcggcccc 180
acaccggcgg ccagaagagt gtctcggcca gcggcgatac cttgggtgcc gtcacagcg 240
acctggaggc cagctattcg ggcatttcgg agcgcctgat ggaccgtct tccccaggta 300
agttgcaccg cttcgtgaac atctacgtca acgacgaaga cgtgcggttc tccggcggtc 360
tggccaccgc gatcgtgac ggtgactcgg tcaccatcct ccccgccgtg gccggtgggt 420
gagcggacac atgacacgat acgactcact gttgcatgcc ttg 463

<210> 553

<211> 453

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (306)

<223> a, t, c or g

<400> 553

```

tgcttccggc tcgtatgttg tgtggaattg tgagcggata acaatttcac acaggaaaca 60
gctatgacca tgattacgcc aagctattta ggtgacacta tagaatactc aagcttgccg 120
ggagggtgca tggccgactc ggatttaccc accaaggggc gccaacgcgg tgtccgcgcc 180
gtcagactga acgttgctgc ccgcctggag aacctggcgc tgctgcgcac cctggtcggc 240
gccatcggca ccttcgagga cctggatttc gacgccgtgg ccgacctgag gttggcggtg 300
gacgangtgt gcacccggtt gattcgctcg gccttgccgg atgccaccct gcgcctggtg 360
gtcgatccgc gaaaagacga agttgtgggt gaggcttctg ctgcctgcga caccacgac 420
gtggtggcac gggcagcttt agctggcatt cct

```

<210> 554

<211> 466

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (11)

<223> a, t, c or g

<400> 554

```

ggaaacaccg ncgccgtcgt ggccaccaac accgcgacca gcaccgtgac ccggaccggg 60
gtgccgcgcg aaccggtctt ggccaattgc cgcggcacca agccgtcgcg cgccatggcg 120
aacagcacgc ggcattgccc gagcatcaac accatcacca ccgtggtaag cccggccagc 180
gcgccgacgc agatgatgcc gctggcccag tacaccccgt tggcctggaa cgcggtggcc 240
agatttgccg gcccgcggcc cggtagcgtc cgcagttggg tgtatggaac catgcccagc 300
agcaccaccg ataccgcgac gtagagaagg gtcacgacct ccagcgacgc gagaatccct 360
cgagggacgt ctcgttgagg acgcttggtc tcctcggcca tggtagccac gatgtcaaac 420
ccgataaacg cgaagaacac gatcgatgcc cggccagcac gccgta

```

<210> 555

<211> 466

<212> DNA

<213> Mycobacterium tuberculosis

<400> 555

```

cctgcttccg gctcgtatgt tgtgtggaat tgtgagcgga taacaatttc acacaggaaa 60
cagctatgac catgattacg ccaagctatt taggtgacac tatagaatac tcaagcttgt 120
cctcgggcgt ggccctcgcc aagaaatcgt cgacgccggc ctctgtgca atcgcttg 180
cggtcgccgg gttgtcaccg gtgatcatca cgggtcggat gctcattcgg cgcatttcgt 240
cgaagcgttc ccgtatgcc accttgacga tgtccttcag atggacgacg ccgatggccc 300
gcgcgctgct gttatcggtc cattccgcaa cgactagggg tgtccccccg ccggagctga 360
tgccgtcgac aatggcacc acctcctcag tggggtggcc accgtgatcg caaaaccact 420
tcataccgc agccgcggca ccttgcggat ccgaacggat gcgctc

```

<210> 556

<211> 467

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (383)

<223> a, t, c or g

<220>

<221> modified_base

<222> (427)

<223> a, t, c or g

<400> 556

```

ttcgttcgat ggcgccgccc cggctacggt ttgacctgtg ggtgtcgaat tgggggtcaaa 60
ttccgaggtc ggcgcgctaa gagtgggtcat cctgcaccgc ccggggggccg aactgcgccg 120
gctcacaccg cgcaacaccg accagctgct gttcgaccgc ctgccctggg tatcccgcgc 180
gcatgacgag cacgacgaat tcgcccagct gctggcttcc cgcggtgctg aagtgcgtgt 240
gctgtcggac ctggtgactg aggcactaca tcacagcggg gccgcccgcg tgcaggggat 300
cgccgctgcc gtcgacgcac cgcggctggg actgccgctg gcgcaagaac tttcggccta 360
cctgcgtatc tcgacccaag cangttggcg catgtgctga cgccggcatg acttcaacga 420
actccntcc gacacgccga acgaagtgtc gttgggtgtg cgtatgc 467

```

<210> 557

<211> 142

<212> DNA

<213> Mycobacterium tuberculosis

<400> 557

```

gcggcgagtg tgggtgggtgc cgaacacgaa tccaacgacg cactggcgga gagataccac 60
ttgctgtact ggaagcacgt gctgatgatc tcccgtggaa tgtgcctcgc cgccgtctat 120
cgaaaacagt gagcatgctg cg 142

```

<210> 558

<211> 217

<212> DNA

<213> Mycobacterium tuberculosis

<400> 558

```

caaccgcgct cggcgcgctct gggccttccg ccggctccgc cgacaattct atctctggat 60
cagcggggct ctccggggccg gcctccgcga actcaacagg ccgcgccttc cggccgaaac 120
attccctagc catatatgat cgcacctcga tacacgatct ggcggcaaca ccgcaaagcg 180
tccgacgggc ccaacctccg caattcaggt atccggg 217

```

<210> 559

<211> 147

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (25)

<223> a, t, c or g

<400> 559

```

gaaggtcggc gaaggtgtgg ctgntgccc atcacgaatc caatgatgca gtggtcggaa 60
gatattagcc acttgctgtt ctggagacag gtgctgatga tctcccgtgg aatgtccctc 120
gactccgtct atcgaaatct gtgaaca 147

```

<210> 560

<211> 177

<212> DNA

<213> Mycobacterium tuberculosis

<220>

53941100

<221> modified_base
<222> (76)
<223> a, t, c or g

<220>
<221> modified_base
<222> (89)
<223> a, t, c or g

<400> 560
tcctgcgctc tgggccattc tcgggtctgc cgacaattct atctctggat ctgtggggct 60
ctcttgcccg gcctcngcga tctcttcang gcgcgccttc cggccgaaac attccctatc 120
catatatgat cgcacctcta tacaccgttt ggcggaaca ccgcaaagtg tctgtcg 177

<210> 561
<211> 128
<212> DNA
<213> Mycobacterium tuberculosis

<400> 561
agctttacgc tggcgatatca gcgttggggc cgctgccatt tcggtcgccc aacgcgttgc 60
cagctccctg cgctgtcagg gcttgcgcg caaactggcc accgcaacaa acttggctga 120
gcttgatc 128

<210> 562
<211> 142
<212> DNA
<213> Mycobacterium tuberculosis

<400> 562
ctctatctgg cgtcacattc gcaatcttta gattgcagat atcgataaaa tcacccgcgc 60
gacaagaccg ccatgtcatc ctttcgatgt tatttcgccg gcctgggggaa agcgcaacga 120
cgttgcctac acgttccgcc gt 142

<210> 563
<211> 406
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (7)
<223> a, t, c or g

<220>
<221> modified_base
<222> (343)
<223> a, t, c or g

<400> 563
agctttncct tgcattctgca ccccgatcca cgtcagccac gtcggcggtc tccaccaaga 60
agttgcgggc attctccttg ccctggccga gctgctcgcc ctctaggtg aaccaggcac 120
ccgacttgcg gatgaggccc tgatccacac ccatgtcgat cagcgagccc tccctgctga 180
ttcccttgcc gtagaggatg tcgaactcgg cctgcttgaa ggggggagaa cagttgtgca 240
cgacaacccc ttcggcgacg aggggtgtgca gttcctcgac ctcgaggtcg aacgttcgtg 300
cccggcgcgt tggcagcact tctcggatca cggaatagcg ganttccttc gccagcatgt 360
cgtgcaggaa tttgtcatcc agggcatccg cgagcgccctg cacgcg 406

<210> 564

<211> 311
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (7)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (62)
 <223> a, t, c or g

<400> 564
 actgtcnagg gaatgcttcg cagcatctac ctgcagtcgc ttgtgcataa gcggacggcc 60
 cnacctgttc gtgttcggg acaccagacg cgggagcacc ggcagtacgg cgaaagggtt 120
 gagcggaagg agttgcgcaa atcggggcgc cccaacaccc gtccgcaaga cgcggtcaac 180
 gacctgtttc aggcgatcag ggtcaccgac tcacctgcac tgagaacaag cgatctgctg 240
 atctgccaga agatggacat gaatgtccac ggcaagcctg atggcctgcc gctcttccgg 300
 gaatgtttgg c 311

<210> 565
 <211> 310
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (30)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (44)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (69)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (71)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (212)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (257)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (298)
 <223> a, t, c or g

53941100

```
<400> 565
tgaattatga tccccgacaca actgcatcan ttttagccgcg tcgngatgct atccgccgac 60
ggttttganc nggtccgtgt cgttcgtgtt gatctcacc gaagtttgtt ccgccgccgc 120
cggggatcta gcgaacgtgg gatcgacaat cagcgccgcc aacaaggcgg cagcggtgtc 180
gaccacgcag gtgctggccg cgggcgccga tnaggtgtca gcgcgcatcg cggcgctgtt 240
tggtatgtac ggctgnaat atccggcgat cagtgcgcaa gttgccgcgt atcaccanca 300
gtccgtgcag                                     310
```

```
<210> 566
<211> 326
<212> DNA
<213> Mycobacterium tuberculosis
```

```
<220>
<221> modified_base
<222> (11)
<223> a, t, c or g
```

```
<220>
<221> modified_base
<222> (27)
<223> a, t, c or g
```

```
<400> 566
aacggggacc ncaagaaacc attcaanaac gagggggtcgt caccaacgtc gaaaccgacg 60
gttgccagcc ggcccacgat attgcgtgct cgaggggtccg ctgtaccctc accgaacgtg 120
agtcccacac cgcgaggcgg ggcgactctg gcgtcgtag cagccgagct caaggtgtcc 180
cgcaccactg tctcgaatgc ttttaaccga ccggatcagc tctccgccga tctacgtgaa 240
cgagtgttgc ccacggccaa gcgactgggc tatgccggac cggatccggt ggcgcgatcg 300
ttgcggaccc gcaaagccgg tgcggt                                     326
```

```
<210> 567
<211> 374
<212> DNA
<213> Mycobacterium tuberculosis
```

```
<220>
<221> modified_base
<222> (13)
<223> a, t, c or g
```

```
<220>
<221> modified_base
<222> (15)
<223> a, t, c or g
```

```
<220>
<221> modified_base
<222> (20)
<223> a, t, c or g
```

```
<220>
<221> modified_base
<222> (23)
<223> a, t, c or g
```

```
<220>
<221> modified_base
<222> (93)
<223> a, t, c or g
```

53941100

<220>
<221> modified_base
<222> (205)
<223> a, t, c or g

<220>
<221> modified_base
<222> (262)
<223> a, t, c or g

<220>
<221> modified_base
<222> (268)
<223> a, t, c or g

<220>
<221> modified_base
<222> (275)
<223> a, t, c or g

<220>
<221> modified_base
<222> (327)
<223> a, t, c or g

<400> 567
agcttttgag ccncnccgan ccnccggtac gccccgccac cgccgtaccc ggcacccgac 60
ccctttgagc cgttcgccgt ggccgcggtg ganctggccg acgagggact gatcgtgctg 120
ggcaaagtgg tcgatggcac gctggccgcc gatctgaagg tcggcatgga gatggagctg 180
acgaccatgc cgctgttcgc cgacnacgac ggtgtgcagc gcatcgtcta cgcgtggcgg 240
atcccatcgc gcgccggcga cnatgcanag cgcanccgatg ctgaggagcg gcgccgatga 300
ggatgagcgc gccggaaccc gtttacntcc tgggtgccgg tatgcacccg tgggggaaat 360
ggggtaatga cttc 374

<210> 568
<211> 422
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (6)
<223> a, t, c or g

<220>
<221> modified_base
<222> (20)..(21)
<223> a, t, c or g

<400> 568
ttctcncatc gttcgtactn ngatgggacg ctgctgcccg aggcgatcct ggccaaccgg 60
ctctcgccgg cgctgacctt cggcgggggc aacctgaact tctttccgat gggcgcttgg 120
gccaaacgta ccggggctat cttcattcgg cgtcagacga aagatattcc cgtctaccgc 180
ttcgtattac gtgcttacgc cgcgcagctg gtgcaaaacc atgtcaacct cacctggctg 240
atcgaagggg gtcggaccag aacggggcaag ctacggccac cgggtgttcgg gatcctgcgt 300
tacatcaccg atgcggtcga cgaaatcgac ggtcccgaag tgtatttggg gccgacctcg 360
atcgtgtacg aacagctgca cgaagtggaa gccatgacca ccgaagccta tggcgccgtg 420
aa 422

<210> 569
<211> 300

53941100

<212> DNA

<213> Mycobacterium tuberculosis

<400> 569

```
ttcttccggg taccgctgat cggcggcacc atcacgcacc cgggtgcagg cgaggcggcc 60
gccggtgtgg tgttgctacg gccgggccag ccgggtaccg gtgtgatcgc cgggtgtgct 120
gcccgcgcgg tgctggaatg tgcgggggtg cacgacatct tggccaagtc gctgggcagt 180
gacaacgcga tcaatgtggt gcacgccacc gtggccgcgc tcaagctgct gcaccgtccg 240
gaggaggtgg cggcgcgcgg cggtttgcca atagaagacg tccccccggc cgggatgctg 300
```

<210> 570

<211> 343

<212> DNA

<213> Mycobacterium tuberculosis

<400> 570

```
gtcgaaagtg accatctcta ccttgagtgc cataccgccc gaccctatgc ctcggatagc 60
tcggcggaag gaaacgcttg cagtgccgcc gaataggcgg ctacgtcgtg agcgcccatc 120
aactctcgcg cggagtgcac cgccagctgg gcggcgccga cgtcgaccgt ggggattccg 180
gtgcgcgcgg cggccaacgg cccgatcgtc gacccgcacg gcagatcggc gcgatgttcg 240
taacgctgca taggcactcc cgcgcgctgg caggccagtt gcgaaacgcc cccgccgggt 300
gccttcctgc ggttggtttt accgcaaatt tggggttgcc cct 343
```

<210> 571

<211> 220

<212> DNA

<213> Mycobacterium tuberculosis

<400> 571

```
aaagccacgg aaacgattgc ctactgccga atcggggaac ggtcctcgca cacctggttc 60
gtgttgccgg aattactcgg acacaaaac gtcaagaact acgacggcag ttggacagaa 120
tacggctccc tgggtggcgc cccgatcgag ttgggaaact gatatgtgct ctggacccaa 180
gcaaggactg acattgccgg ccagcgtcta cctggaaaaa 220
```

<210> 572

<211> 254

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (13)

<223> a, t, c or g

<220>

<221> modified_base

<222> (234)

<223> a, t, c or g

<400> 572

```
tttcgccacc gcnaggtcgt gcgcgttcca gaaaagcgtg gtttcgccgg gcgcgaggat 60
tcgacgggcc aactgaccag ccgggtcccg caccggttag gcaggatcgc ggtgtctata 120
tgttcgccct cggcataaac gccattgctg cggtgaaaat cggacatctc gccgattgcc 180
acgtctacat gatccgcttt gtcccgcgcc gggtcgttga caaacgcgat gtcngcctcc 240
tggaagcgg tggc 254
```

<210> 573

<211> 329

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (25)

<223> a, t, c or g

<220>

<221> modified_base

<222> (49)

<223> a, t, c or g

<220>

<221> modified_base

<222> (169)

<223> a, t, c or g

<220>

<221> modified_base

<222> (174)

<223> a, t, c or g

<220>

<221> modified_base

<222> (192)

<223> a, t, c or g

<220>

<221> modified_base

<222> (235)

<223> a, t, c or g

<220>

<221> modified_base

<222> (262)

<223> a, t, c or g

<220>

<221> modified_base

<222> (283)

<223> a, t, c or g

<400> 573

tcgccaagt	gattcgtgct	caccnaccgag	atccgtggtc	ggatccgcng	ctgcggcggg	60
ctgcgaccct	gcattctcggc	ggcaccctgt	accaaattggc	gcgcgccgaa	gcagacgtct	120
cggcgggacg	ccacgccgac	tggccgatgg	tgctggccgc	gtgtccgcnc	gtcnccgacc	180
ccggccgcat	cnaccaaac	ggccgccgtc	cgttctggac	ctatcccacg	tgccntcggg	240
gtccacgctc	gacgcgaccg	anaacgtaac	cagcgtcctc	gancggttcg	cccccggtt	300
ccgtgacatc	gtggtggcgg	ccgcgccgt				329

<210> 574

<211> 297

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (92)

<223> a, t, c or g

<220>

<221> modified_base

<222> (95)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (99)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (104)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (107)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (140)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (165)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (177)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (185)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (241)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (257)
 <223> a, t, c or g

<400> 574
 gtaccgtcac catgatcgcc cccatcggca tcggtgagct gatagatccc agccggtttc 60
 gccaaacccg gagcgatctt ggcgcgctgc tngtngtcnc tganacntag ccaccaacag 120
 agcccgggtgt gcgacaagan gactgatcgg atctctccgg acacntcgag ggggtcntca 180
 ggagnccggg cgccaccccg aggtaagcct ccgcccagcc tcacaccgcg accgggtatc 240
 ncaagtcgcg caataancc accacctcct cggacccac gttgtatgcg gctgggt 297

<210> 575
 <211> 401
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base

<222> (280)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (356)
 <223> a, t, c or g

```
<400> 575
atactcaagc ttagacctca ctgatgtggc gggacgcggg agataaccgc ggttcgagcc 60
gttcaacagt ggtggttccc acaccagtgg tttgcctttg cgaagtaaag cgattcgatt 120
tgctcgaaaa gagggctggc tgctcgtgag ggacatccat ggccgatacc tcagcgatct 180
caacgggtcaa gcgactgcat gtttggcgca aggtatcgct aagcataggt tcgtgacgga 240
tttgacagca agagctttcc aaagattgct gtccacatan tgattcgcat ctctacacct 300
cttcgccggg gctgtcaaga gccattcgaa tcagttatct cgctcgtgct tggaanaaat 360
tttccagcc  tgcgttggaac aaaccgcgct gccaaagcgg t 401
```

<210> 576
 <211> 453
 <212> DNA
 <213> Mycobacterium tuberculosis

```
<400> 576
agcttcccga gaaacagtgc attcccctaag cagcccgttg tcacgccgat gagtgaagag 60
tgcacgcaat cgccggaatc cggcaaagcc ctgcacaagc gaaatcaacc cggaggctga 120
caaggcaacg tcggtgatcc gtaccgcctg gttggacaaa cggcagaagg cggcctcgtc 180
cgggtccatct acgccgagca cactgggtgat agcgcgcatc ggcatcgggt cggccacggg 240
ggagacgacg tccgcgggcg tctgggtcag taaccgcgcg accagttctc gggcaagctg 300
gtcgaccatc gggcgccacg tctccaacgc gccacgcgcc atacctgggt ccagttgctt 360
gcgcatccgg gtgtgcgccg gcggatcgga cgtcgcagaa acgcagccac cccgtgagaa 420
gtgaccacg gcgctggaca cgtgtctggt tac 453
```

<210> 577
 <211> 474
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (106)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (261)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (323)
 <223> a, t, c or g

```
<400> 577
cggccgggat gtgcgcaatg gcaggttgtc gcccggcttg atgtcggcgt tagcgccgga 60
ttccaccaca tccccttgcg aaagtccgtt ggggtgcaatg atgtancgct tctccccatc 120
gagatagtgg agcaacgcaa tccgtgcggt acggttcggg tcgtactcga tgtgcgcgac 180
cttggcggtg acaccatctt tgcatggcg gcgaaagtcg atcatccggt aagcgcgctt 240
atgaccgccg cctttgtgcc nggtggtaat ccggccatgc gcgttgcgtc caccgcgacc 300
gtgcagcggg cgaccagcg acntctccgg ggttgaccgg gtgatctcgg cgaaatcaga 360
tacgctggcg ccgacgacg caggcgctcg gggcttgtag ttgcgaattg ccatggtcta 420
atcaggtctt tctctcacct ctcgtcgccg ggctagggcg cattgcctgc tcct 474
```

<210> 578
 <211> 357
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (289)
 <223> a, t, c or g

<400> 578
 tagcgggtgta accaactccc gggtcaccac ccgcaaact cttgcggcaa cagcaccgtc 60
 gacgcgtcaa ccgggctgcc cggaatcctg tggatgggca tcgagtgcac ggtcacgacg 120
 tccccgacgc ggccggtggc aacgacaagt ggcccggatg caccacaaat gacggccgca 180
 caccggtggg gacggccagc acgagagccg tgtcgcccga gtcgacgcta atgccgtagg 240
 cattggccgt cacaacaggc gacgccccgc gtaccaccga gtccacggng gttgggctgt 300
 ctcctcggcc aaccaggcgt gaacccggcg gatccgaatg cagcaagacc cgtgggc 357

<210> 579
 <211> 269
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (25)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (29)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (224)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (246)
 <223> a, t, c or g

<400> 579
 ccattgggtcg gtgtgcgcat accantacna cgcgccgggc acctgacgcg gcggccgcaa 60
 ccattcggtg gccatcgcca tcgtctgcc cccggtcaac ggacgcacct tctcctggcc 120
 gacctagtgc gcccacccgc cgccgttgcg tccatcgat ccggtcaaca tgagcagcgc 180
 caacaccgag cggtacatga catctgctgt ggaaccagtg acanattccg ccgccccatga 240
 tgatcntcga ccgtcctccg gattcggtc 269

<210> 580
 <211> 272
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (31)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (112)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (228)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (234)
 <223> a, t, c or g

<400> 580
 gccggcctgg tcaaaggggc gtccgaagga nccgggctgg gtaacaagtt cctggctcat 60
 atccgcgaat gcgacgccat ttgtcagggtg gtgcgggtgt tcgtcgacga cnacgtgact 120
 catgtcaccg gacgggtcga tccccagtcc gacattgagg tcgtcgagac cgagctgac 180
 ctggcagatc tgcaaaccct ggagcgggcc acggggccggc tggagaanga agcncgcacc 240
 aacaaggcgc gcaagccggt ctacgacccg gc 272

<210> 581
 <211> 373
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (181)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (261)
 <223> a, t, c or g

<400> 581
 gatccactga ccacgatgac atatcgaaat gctcgacgat tccgatggcg atcaaggcca 60
 cgatgccctg gccgttgggc ggtatctggt ggatggtgta cccgcggtag gttcccgtga 120
 tcgtgtcgac ccagtcacac cgatgggccc cgaggtcgtc ggcacgcac accccgccgt 180
 ntgccgccga gtgcgcctcg agtttggcgg ccagctctcc ccggtagaac tctcaccgtt 240
 ggtcgcccgc atcttctcta ncgtcgccgc gtggtcagga aaggtaaaca gctcaccggg 300
 tttcggcgct cgtccgccgg gcatgaacgc atctgcgaat ccgggctggg atgcgaacaa 360
 cggacctgtg ccg 373

<210> 582
 <211> 314
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (36)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (100)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (113)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (132)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (142)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (208)
 <223> a, t, c or g

<400> 582
 tctactgccg aatcggggaa cggtcctcgc ccaccngggt cgtgttgccg gaattactca 60
 ggacaccgaa acgtcgagaa ctacgagcgg agttggacan aataccgctc ccnggtgggc 120
 gccccatcg anttgggaag cngaaatgtg ctctggaccc caccgaagaa tgacattgcc 180
 ggccgcctc caactggaaa tagaaacngt gatcaccgcg cgcgttcttg gaaggaatgg 240
 catgccctgg gccgggcgtt cttccgctg ccggactcct cccaccaatt caccgccgaa 300
 ggcgccccgt ctgc 314

<210> 583
 <211> 135
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 583
 atactcaagc ttctgtcacc gaaatcccgc atgggataac gggtttagat ttcgacaacg 60
 ggaccgtgtt tctcaacaag ccggtcatca gctgggcccgc cgacaacggt atctacttca 120
 cccgctttcg cccgt 135

<210> 584
 <211> 221
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 584
 ctggctcaag cgctcggcgc gcaggtgaac tcggaccggc tcgacgtcgc cgaacgcgag 60
 gcggtgctgg cccacgccga cgccgtcgtc gcacatatcg gcaccgtgca caagtctaca 120
 acaacgccgg catcgcgtac aacggcaacg tcgacaagtc ggagttcaag gacatcgagc 180
 gcatcatcga cgtcgacttc tggggcgctc tccacgggcc c 221

<210> 585
 <211> 70
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (70)
 <223> a, t, c or g

53941100

<400> 585
ccgccctccg cattatgggt caagaaccat cgggtcggac ttctgggctt ccaacgctcg 60
cgccgtcccn 70

<210> 586
<211> 241
<212> DNA
<213> Mycobacterium tuberculosis

<400> 586
ccgtggcact gtcagacata tgcgccgctc ctctcatcg ctgcgctcgg catcgtcgcc 60
ggcggtcatt ggcgtcacct acccaagccg aacgcgaaac gagaacgtgt tccattatta 120
gggtgtgagc accaatacca gattgtcac caggaactca cgcagcaccg ggacggatgt 180
cggccaccac gcccattctgg ggtggtagcg gggaaatacc gctaacgcgg ctccggtgccc 240
g 241

<210> 587
<211> 492
<212> DNA
<213> Mycobacterium tuberculosis

<400> 587
tactcaagct tgtccaaata tcgaagcgctc gggtcgagag gctcggctcgg cagctccagc 60
aaaaccgcgt ccacccttag atgccggtat ccctcaaggt ctttatccgc cgcttcaccc 120
cactggcaca cggtcaccgg cacgtcgccc ccggccatgg cgcgcaaccg ctgaagcgga 180
cccgaagacc gctgcggtga tggactgata gcgatccacc cggcattgag ccgggctatc 240
cgcggggaagt tcgcccgtcc cccgcccaca tacagcggag gatagggtctt tgcaccggc 300
ttcgccagc agtagatcgg atcgaagtcc acatatgtcc catggaattc cgcctgctcc 360
tgcgttcaga tctcgattat cgcgcgcaac cgctcatcga tcacacgtcc gcgcaccgca 420
gggtccacac catggttggc gacttcttcg cgcaaccagc cacaccacg ccgaaacgaa 480
accgtccctg cg 492

<210> 588
<211> 313
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (250)
<223> a, t, c or g

<400> 588
caggcatgca agcttggcca actcctcatc ggacttgaag gtgccgtcct cgttggcggc 60
cctgctccac ggcacgttga tggcaccagg aatgtgtccg ggccgctggc ttgtttcttg 120
cggcaggtgc gcgggggcca ggatcttgcc ggagaactcg tcgggagagc gcacgtcgat 180
gaggttcttg acgttgatgg ccgccaggac ctcgctcgcg aatgcccga tcgtgttatc 240
cggcggggan gcggtgtagg aagtcaccgg ccggtcgacc gggtcgctgg acagcgggag 300
tccgtcgagc tcc 313

<210> 589
<211> 305
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (265)
<223> a, t, c or g

53941100

<400> 589
atactcaagc ttcaaaacag gcctgttggtg ggcgcacccg gctcgccgag ttctgcacgc 60
accgcctcaa gtgcggcccc caccgccggc atctcccggc cacgcagggc cgcgggccgc 120
ggcgagcga cggcgtgttc gcgcagttcg ccgtcaatga tgctgacctg atcggccacc 180
cgggcggtct cggcgtcgtc ccgttacta atcgcggtgc tcagcagcgt ctcgacagcc 240
accacccgag tggagaccag atgcnccacc acggaccgca gcgatgccag tcacctcacc 300
cgtcc 305

<210> 590
<211> 394
<212> DNA
<213> Mycobacterium tuberculosis

<400> 590
caggcatgca agctttgcag ttgctgagta atgtcggcca acgtcaccac aatcgcgatg 60
aattcaatca tgccgcccag ggcggccaac ccaatggtgg ccgcgagcgg cagctcgatc 120
gcagcgcgga ggttgccggc cgccagtga ttacgaaca ggggtgaggtc ataggcgggc 180
aggatagtga cgaaggcaag acctagatct gccgtcggaa gaagaatcga gtatccggtc 240
gacacaacgg aagcgaaagt gtccgcgatg ttgatgagcg tcgccggttg tggcggcggt 300
ggcggcggtg gcaccgtccg cacataccgc gggaacgcgg gcatccgaat ttggggcagg 360
gtgttcaagg cggctggcaa ctccacctga atct 394

<210> 591
<211> 457
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (445)
<223> a, t, c or g

<400> 591
ccggctcgta tgttgtgtgg aattgtgacc ggataacaat ttcacacagg aaacagctat 60
gaccatgatt acgccaagct atttaggtga cactatagaa tactcaagct tggccgcagg 120
gccgagtcga ttggtcgcgg tcgcctcgac agttagctta tgcaatgcta acttcggggc 180
aaagttcagg cggatcggcc gatggcgggc gtaggtgaag gagacagcgg aggcgtggag 240
cgtgatgaca ttggcatggt ggccgcttcc cccgtcgcgt ctcggtgaaa tggcaaggta 300
gacgctgacg tcgtcggtcg atttgccacc tgctgccgtg ccctgggcat cgcggtttac 360
cagcgtaaac gtccgccgga cctggctgcc gcccggtctg gtttcgccgc gctgacccgc 420
gtcgcccatg acagtgcgac cctgnaccgg gctggcc 457

<210> 592
<211> 438
<212> DNA
<213> Mycobacterium tuberculosis

<400> 592
gtgtgctgtc aattcagagc tgagcctgat gcactcaact tactgagcat gctaacgctg 60
gtcgtgcggg tcttgttccc gcgtgtcggc agggcacacg ctcggggcgt agctgggaga 120
ggccccggtc aagcccggag agcagtgctc agtccgccag cttgaccgac tttcgatgag 180
aacgcgcttc tcgccgtatt gaactggcgt gctgacggtc gctgagcagc gctcgccgag 240
tgccggcgtc gattctttca tcgagccagg aggcgcattc gtgttcggcc gcctgcgggt 300
cggccccatc gtcgacgcga tccgtcacc actcctcgat caggtctgcc tcatcgaacg 360
ggccaacggt gctgtcggag taagtgtgcg tgggcacgcg agccgggtgc tgtggtacac 420
ccaccgttgc atgaacaa 438

<210> 593

<211> 220

<212> DNA

<213> Mycobacterium tuberculosis

<400> 593

atactcaagc	ttcaccaggc	gccggcgggc	cgcgggcgcca	agccaggcag	ccgcgctcgg	60
cgcgctcggg	ccttccgccg	gctcggccga	cagttcgatc	tctggatcgg	cggggctctc	120
cgggccggcc	tcggcgacct	cagcgggccc	cgcttccgg	ccgaaccatt	ccctagccat	180
agataaccgc	acctcaatgc	acggtttggc	ggcaaccgg			220

<210> 594

<211> 266

<212> DNA

<213> Mycobacterium tuberculosis

<400> 594

agcttccgtc	acgacccgcc	ctcgccggtg	ccggcgccat	cggtcatcgg	atctcatgac	60
gacgtcacgt	aggcccgtc	gccgcgagcg	ggcgcggtca	actggcgagg	cgggcgcgac	120
gtgactgagc	tggccgagct	ggaccgggtc	accgcggaac	taccgttctc	gctcgacgac	180
tttcagcagc	gggcttgtag	cgcgctggaa	cgcggccacg	gtgttgctgg	tgtgcgcgcc	240
gaccggcgct	ggcaagacgg	tggtcg				266

<210> 595

<211> 105

<212> DNA

<213> Mycobacterium tuberculosis

<400> 595

atactcaagc	ttgccgggac	cgcggaacag	aaccggcggt	tcctaccgag	gtgtgcggcc	60
ggcgcgatat	cggcctccc	actaaccgaa	cccgatgtgg	gctcc		105

<210> 596

<211> 141

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (138)

<223> a, t, c or g

<400> 596

acgttggctc	tgccggaacg	tatttccagc	ggcacgcatt	cgcggtgggt	gccgggagcc	60
gagttgcgtc	gctgggatca	cgcagcagtc	gccggcggtc	gccgtcgggc	tatgaattgc	120
accgagccgg	aaaatccnca	c				141

<210> 597

<211> 234

<212> DNA

<213> Mycobacterium tuberculosis

<400> 597

atactcaagc	ttgtcgtatt	ccgtggcact	gtcagacata	tgcgccgctc	ctcctcatcg	60
ctgcgctcgg	catcgctgcc	ggcggtcatg	gcgtcaccct	acccaagccg	aacgcgaaac	120
gagaacgtgt	tccattatta	gggtgtgagc	accaatacca	gattgctcac	caggaactca	180
cgcagcaccg	ggacggatgt	cagccaccac	ccccatctgg	ggtggtagcg	ggga	234

<210> 598

53941100

<211> 184
<212> DNA
<213> Mycobacterium tuberculosis

<400> 598
cgttggtagc ccgatatgca tagtgatatct tactgaacat gatttccatt atggagccccg 60
gggtgccggc agcgcgaacg gtgcgccgtc agacgcgggc ggcactgacc aggggtgttgc 120
gggcgaacat cggccccggtc tcggattccg gtccgggtac cgggcgaccc accgcttcga 180
ggta 184

<210> 599
<211> 351
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (335)
<223> a, t, c or g

<400> 599
atactcaagc ttggccaact cctcatcgga cttgaagggtg ccgtcctcgt tggcggccct 60
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caggtgcgcg ggggccatga tcttgccgga aaactcgctg ggagagcgca cgtcgatgag 180
gttcttgacg ttgatggccg ccaggacctc gtcgcggaat gccggaatcg tggtatccgg 240
cggggaggcg gtgtatgagg tcaccggccg gctgaccggg tcgctggaca gcgggcgtcc 300
gtccagctcc cacttcttgc gggcgccgtc caacnacttg acttctcctg g 351

<210> 600
<211> 438
<212> DNA
<213> Mycobacterium tuberculosis

<400> 600
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ccggcacggtc gcccccgcc atggcgcgca accgctgaag cggacccgac agccgctgcg 180
gtgatggact gatcgcgatc caccggcat tgagccgggc tatccgcggg aagttcgccg 240
gtcccccgcc cacatacagc ggaggatagg gctttgtcac cggcttcggc cagcagtaga 300
tcggatcgaa gtccacatat gtcccatgga attccgcctg ctcttgcgtc cagatctcga 360
ttatcgcgcg caaccgctca tcgatcacac gtccgcgcac cgcagggtcc acaccatggt 420
tggcgacttc ttcgcgca 438

<210> 601
<211> 410
<212> DNA
<213> Mycobacterium tuberculosis

<400> 601
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cacacttctt tgcggttcgg tgatctcgac accggccgcg agccgaccac catgcgcgcg 120
taaatcggcg atcagcgcggt cggctatcgc ctgggtgccg cccaccggaa tcggccagcc 180
gaccgaatgg gccagcggtg ccagcatcag tccggcgccg gccgacacca gtgacggcaa 240
cggtgaaatc gcgtgggccc caacgccggt gaacaacgcg cgggcatcct cgcccgcag 300
cgaccgccag gcaggggtgc cctgggccag catccgcagc ccgagacgca ggaccgagcc 360
cagtgcagta ggcaaagacc gcttgtcggg gacatgaact ccacgaccgt 410

<210> 602
<211> 456

53941100

<212> DNA

<213> Mycobacterium tuberculosis

<400> 602

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atccgttgcc	tgcgagcgac	aggctccggt	gcggcggttg	gcgccgtgct	cgtcccagcg	180
tccggtcccg	ggtcgcccggc	gacgcttggt	tcctccatac	tcgcccccta	atctcgaggc	240
agccccgtacc	cgcaggcaac	ctcccaaaaa	tgcaatcccc	caaaatgcaa	tgcgtcgagc	300
tatttctcac	accgaccgct	agttgcggat	cagaaatccg	ttgggcgcgg	aagtccagcc	360
gaatttgttc	tcccgtccg	catcatgctt	gtaatcgttt	ggaaattcat	cctcatatgc	420
ctcgatcgct	tcatagggtc	caggccaaac	cgggca			456

<210> 603

<211> 217

<212> DNA

<213> Mycobacterium tuberculosis

<400> 603

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tatgaccatg	attacgcaa	gctatttagg	tgacactata	gaataactcaa	gcttggccac	120
ctcgcggtgt	gtggtggaac	ccatctgagc	agtgtgcaa	accggggcag	acagctccca	180
attgacgtga	gcccgtctac	ttgctgggta	agcgctcg			217

<210> 604

<211> 478

<212> DNA

<213> Mycobacterium tuberculosis

<400> 604

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cttgcgaaag	tccgttggtt	gcaatgatgt	agcgcttctc	cccacgaga	tagtggagca	180
acgcaatccg	tgcggtacgg	ttcgggtcgt	actcgatgtg	cgcgaccttg	gcgttgacac	240
catctttgtc	attgcggcga	aagtcgatca	tccggtaagc	gcgcttatga	ccgccgcctt	300
tgtgccgggt	ggtaatccgg	ccatgcgcgt	tgcgtccacc	gcgaccgtgc	agcgggcgca	360
ccagcgactt	ctccgggggt	gaccgggtga	tctcggcgaa	atcagatacg	ctggcgccgc	420
gacgaccaag	cgtcgtgggc	ttgttcttgc	gaattgcatg	tctaatacagg	tctttctc	478

<210> 605

<211> 459

<212> DNA

<213> Mycobacterium tuberculosis

<400> 605

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cacggtcaac	ctgccacacg	gcactggtaa	gactgcccgc	gtcgcggtat	tcgcggttgg	180
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cgaaaggatt	cagggcggct	ggctggaatt	cgatgccgcg	atcgcgacac	cggatcagat	300
ggccaaagtc	ggtcgcatcg	ctcgggtgct	gggtccgcgc	ggcctgatgc	ccaaccgaa	360
aaccggcacc	gtcaccggccg	acgtcgccaa	ggccgtcgcg	gacatcaagg	gcggcaagat	420
caacttccgg	gttgacaagc	aggccaacct	gcatttctc			459

<210> 606

<211> 464

<212> DNA

<213> Mycobacterium tuberculosis

53941100

<400> 606
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gggtgcaatg atgtagcgt tctcccatc gagatagtgg agcaacgcaa tccgtgcggt 180
acggttcggg tcgtactcga tgtgcgcgac cttggcggtg acaccatctt tgtcattgcg 240
gcgaaaagtcg atcatccggt aagcgcgctt atgaccgccg cctttgtgcc ggggtggtaat 300
ccggccatgc gcgttgcgtc caccgcgacc gtgcagcggg cgcaccagcg acttctccgg 360
ggttgaccgg gtgatctcgg cgaaatcaga tacgctggcg ccgcgacgac caggcgtcgt 420
gggcttgtag ttgcgaattg ccatgtctaa tcaggctctt ctct 464

<210> 607
<211> 205
<212> DNA
<213> Mycobacterium tuberculosis

<400> 607
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gatggacgcg gcggtgatgt cctgatcacg gaactggctg taatagccca gggtcgccac 180
gcttccatcc gggcccgac ccggc 205

<210> 608
<211> 244
<212> DNA
<213> Mycobacterium tuberculosis

<400> 608
gatgatcgcc ggtgccaccc cgatccgtgc ctcggtcagc gcgaacgtgc tttccgggtcc 60
ggcgaccacc atgtcgcacg caccgaccag gccgaacccg ccggcccgcga catgcccgtt 120
gatggcgccg accaccggca gcggcgactc gacgatggcg cgcaacagcg ccgtcatttc 180
ccgcgccccg gccaccgcca tccggtacgg atcaccacca cctccgccgg cctcgctgag 240
gtcc 244

<210> 609
<211> 289
<212> DNA
<213> Mycobacterium tuberculosis

<400> 609
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cccggcgccg atcaagaaac gccccggcgc gcggcggtgt cgtcgatagg catgacgggc 120
accaatgtgc acgccattgt cgagcaggca ccggtgccag cccccgaatc cgggtgacca 180
ggcgacaccc cggccacacc cggatcgac ggcgcgctgc tgttcgcgct gtcggccagc 240
tcgcaggacg cgctgcggca aaccgccgcg cggctggccg attgggtct 289

<210> 610
<211> 282
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (18)
<223> a, t, c or g

<220>
<221> modified_base
<222> (21)
<223> a, t, c or g

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<220>
<221> modified_base
<222> (243)
<223> a, t, c or g

<220>
<221> modified_base
<222> (281)
<223> a, t, c or g

<400> 610
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ctgcgccacc gcggcttgca tgctgggttg ctgtcttggg acgatcccga aatagtccac 120
gcggatctgg tgattttgcg ggctacccgc gattaccccg cgcggctcga cgagtttttg 180
gcctggacta cccgcgtggc caatctgctg aactcgcggc cgggtggtggc ctggaatgtc 240
cancgccgtt cacctacgtg accttgatgg gatccggggg nt 282

<210> 611
<211> 312
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (1)
<223> a, t, c or g

<220>
<221> modified_base
<222> (20)
<223> a, t, c or g

<220>
<221> modified_base
<222> (43)
<223> a, t, c or g

<220>
<221> modified_base
<222> (47)
<223> a, t, c or g

<400> 611
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cgatccgctc gacaatcccg gcggcacgtg acatgccggc ggacggctcg acgagctgga 180
acttcagcga cgacgatccg gaattgatca ccagcacggt gctactcatg gacccctgcg 240
cctgaatccc gtgatggcca cgggtgtgac tattcgtcga cagtgcaccc gagatagtct 300
tcacggctgc gt 312

<210> 612
<211> 349
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (129)
<223> a, t, c or g

<220>
 <221> modified_base
 <222> (256)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (262)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (265)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (285)
 <223> a, t, c or g

<400> 612
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 gatctccana atgatcttgg cggccgccgc cgccttgagc agctcctggg cgatggccag 180
 gttctcatcg atgggcactg ccgaccgtcc cacatgtgcg acggaacaaa gatgtcacct 240
 tgctcacgcg tgcgcnagat cncanaaggg ccggacatac tgtcnacttg tccttgggca 300
 gtggtccgtg tcagcccacg tgacgggtac ttggcgcgat aacgtggtg 349

<210> 613
 <211> 350
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 613
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 tggatccgc cataaagggtg caccttaagc acggcgtccc aattctcgaa cgacatcttg 120
 tggaagggtgc cgtcgcgcaa gatcccggcg ttgctcacca caccgtgcac ggcgccgaat 180
 tcgtcaagcg cggctcttgat gatgttcgct gcgccgtcct cgggtggcgac gctgtcctta 240
 gttggcgacc gcccggcccc ccttgctcgcg aatctcggcg acgacctcat cggccatcgc 300
 cgaacggcgc ccgtgcccgt cgcgggcgcc accgaggtcg ttgaccacga 350

<210> 614
 <211> 126
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 614
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 tcccgccgtg acggtgtctc atctccctca gcaacgcgtg aagtgggtccg atcccgcggc 120
 ttcagg 126

<210> 615
 <211> 395
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (356)
 <223> a, t, c or g

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<400> 615
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gatcacgtcg cgctcgcatc gagcatggcc cgcgacgcta cacgatcgcc gtcgtcgatg 120
acacgaccga gccgtacgcc ggccgtaagc cgcgccagga ttcggcgaaa aacgtctacg 180
tggcgggtgt actgggtgtc gaatgattcg tggggtgcgt atgcgtcctg caatcgtcga 240
catagatccg tcgccgcata gcgtcgacaa ctccgggtga gtggaataca cttgccgatc 300
acgcgacgtg cgcggatcga tgccgaccga aatacgacca catggctctt gttgcnacgt 360
gttgcgcgca tcaaataccc tcagtgcctt ccgac 395
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<210> 616
<211> 371
<212> DNA
<213> Mycobacterium tuberculosis
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<220>
<221> modified_base
<222> (3)
<223> a, t, c or g
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<220>
<221> modified_base
<222> (11)
<223> a, t, c or g
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<220>
<221> modified_base
<222> (23)
<223> a, t, c or g
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gtagacggca cggcgagct ggatcgcgct tggcgcaccc aagcctctac gcgcgtcgct 120
gcgctcgatc cgggtaccga acatattccg gtcgttgccg agagtgtgca tgtgcggctc 180
ttgtgaacga acatagcaaa gcgtatatgt ctgtggcggc tctgcagata tcgcgataat 240
acgtatatac ataaggtggc gcgcgatcta tcggtatata cgttatggcg gacgtgcgtg 300
agcgtgagtc gcggcgcatc gcgcacttcg cgatcgcgctg actggctctc gcgactgcgc 360
gcatgcgtag c 371
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<210> 617
<211> 423
<212> DNA
<213> Mycobacterium tuberculosis
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<220>
<221> modified_base
<222> (86)
<223> a, t, c or g
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<220>
<221> modified_base
<222> (185)
<223> a, t, c or g
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```
<220>
<221> modified_base
<222> (191)
<223> a, t, c or g
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<400> 617
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tgacctgcag	atggaagtcg	tgccacatgc	ccgcgaacgg	cgagctcgat	gcttgttttc	180
gaagngcgca	ngcggtttcg	atcttggtccg	cgtcaacgca	gatcggatct	cgccgcggtc	240
tgcacgacga	tgggcgcagg	cccgtctatg	tcccgtagac	ggggagatac	gggcagccgc	300
ggatcgagac	ctacgtagcg	cggcgcccac	cgtgccatcg	acgaagaatg	acggatcgcg	360
cagcgccgctc	gcgtcgcttc	gatgtcacgc	gagatcgcca	cggcagatca	gcgatgcgcg	420
ggc						423

<210> 618
 <211> 354
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 618						
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gcgaatgcct	cggcaacctc	gtcgaaatgc	gcctccgcgt	ccgcatcgaa	ggtcgccatg	180
tcaaagatca	actcgacgta	gtagctagtt	accgcatcag	gtcagtgttt	gctggcctcg	240
gagtcgggcc	gaacaatggc	catttcccgc	gactctagaa	tccagtcac	gtctcggtga	300
cgacgccttg	ccgatcacat	agctcgaccg	gatcggagag	aatctggttc	tcgt	354

<210> 619
 <211> 128
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 619						
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ctcaacgaac	gattcctgaa	cgaagggctg	tccaccaacc	tccaaaccga	acggttgcca	120
gccccggc						128

<210> 620
 <211> 295
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (31)
 <223> a, t, c or g

<400> 620						
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caccccgtgg	cgtgctgcgc	agcatgaagg	tcggcgcccc	cacgatgtgg	gcgaagcaac	120
aggtaataac	tggtcggcat	gggtcaaccc	tcattggggc	ggtgcggatc	gggtgcacgc	180
ccggagtgcc	ggtcgaactc	aacaccgcct	tcaccgatct	tttcgtcgaa	aatggcggtc	240
gtgtcggggg	atacgtccgc	gatcccacga	ggcggaatcc	gctgagccgc	actga	295

<210> 621
 <211> 361
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (47)
 <223> a, t, c or g

<220>

<221> modified_base
 <222> (53)
 <223> a, t, c or g

<220>
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 <222> (88)
 <223> a, t, c or g

<220>
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 <223> a, t, c or g

<220>
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 <222> (193)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (196)..(197)
 <223> a, t, c or g

<220>
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 <222> (199)..(200)
 <223> a, t, c or g

<220>
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 <222> (202)
 <223> a, t, c or g

<220>
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 <222> (250)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (255)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (266)
 <223> a, t, c or g

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 atggtgcagc tcgacggcgg ccggttcgcc ncgtccgact tgaacgacct gtaccgcagg 180
 gtgatcaacc gcnacnncnn gntgaaaagg ctgatcgatc tgggtgcgcc ggaaatcatc 240
 gtcaacaacn agaancggat gctgcnggaa tccgtggacg cgctgttcga caatggccgc 300
 cgcggccggc ccgtcaccgg gccgggcaac cgtccgctca agtcgctttc cgatctgctc 360
 a 361

<210> 622
 <211> 361
 <212> DNA
 <213> Mycobacterium tuberculosis

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<220>
<221> modified_base
<222> (153)
<223> a, t, c or g

<400> 622
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gcggcgaagt cgatcatccg gtaagcgcgc ttatcgacgc cgcctctgtg ccgggtggta 240
atccggccat gcgcttgcggt ccaccgcgac gtgcagcggg cgcacaccga cttctccggg 300
tgacgggtga tctcggcgaa tcagaacctg gcgcgcgaca cagcgtcgtg gctgtacttg 360
c 361

<210> 623
<211> 312
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (112)
<223> a, t, c or g

<220>
<221> modified_base
<222> (119)
<223> a, t, c or g

<400> 623
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tcccgaatcg gcaaaccctg gccagcgtcg agtccgcagc gccgtcgcgc cccccaccgc 180
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gccagccggg cggcaaaccg gaggacccaa gattcagcac caccatcgct agcccgatct 300
ggccgcgcgt gg 312

<210> 624
<211> 454
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (19)
<223> a, t, c or g

<220>
<221> modified_base
<222> (308)
<223> a, t, c or g

<220>
<221> modified_base
<222> (350)
<223> a, t, c or g

<400> 624
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ggtcaaacca ccgagcggcg aggatctctg gccgtcgacg tgaccgcgca cggccgcggg 120
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gatggccagt	cccgaccgcc	gttccacttg	gcgtacgcgc	tggatgtggt	gtgccgcaac	180
ggaatccac	ctcaattatg	acctcgttgt	gggagagcgc	ggatcgtac	gcccgaccag	240
gaatcgtcga	tgctatctca	cgtcaccgaa	ggcctctccc	agcacaccgc	atccagaacg	300
tgcacacngt	cgacatgtct	cggcggatcc	gcctgcagaa	cgaacgccan	gtgcgctgtg	360
cgacacgggt	cgcgatcacc	gctcgcacgc	ggagatcggc	acacgcgcag	cgcatcgatc	420
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<210> 625

<211> 366

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (145)

<223> a, t, c or g

<400> 625

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gacgtcgtca	gcgcgtatcc	tggcncgggtc	gttgaactgt	gcgcagggcc	ctaccgccaa	180
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cgtggtagag	ctggatgccg	ccagccacgg	cggcgtggac	gacacccgcg	agctgcggga	300
ccgcgcgttc	tatgcgccgg	tccactcacg	gtaccgggta	tttatcgtcg	acgaggcgca	360
catggt						366

<210> 626

<211> 363

<212> DNA

<213> Mycobacterium tuberculosis

<400> 626

gcactcacgc	tggtagaaga	ccttcacaaa	atctgaaatc	ctgacccgat	acttgaacct	60
gggtctcggtc	ggcaataact	cgttcggcgt	gcaggacgcg	gcgcaaactg	acttcggcat	120
caacgcgtcc	gacctgaatt	ggcagcaagc	ggcgtgctg	gccggcatgg	tgcaatcgac	180
cagcacgctc	aaccggtaca	ccaacccgga	cggcgcgctg	gcccggcgga	acgtgggtcct	240
cgacaccatg	atcgagaacc	ttcccgggga	ggcggaggcg	ttgcgtgccg	ccaaggccga	300
tccgctgggg	gtactgccgc	agcccaatga	gttgccgcgc	ggctgcatcg	cggccggcga	360
ccg						363

<210> 627

<211> 367

<212> DNA

<213> Mycobacterium tuberculosis

<400> 627

atactcaagc	ttgtataaaa	agatcgggtga	gcgcacatgat	tcgctccgcc	gggtttgccc	60
ctgcggcggc	ggagctgccg	tgaccgtcta	tttgggtgat	cagatactgg	gctagtccgg	120
tcgggggtggg	gtgatcgaag	atcgcggtgg	ccggcagcgt	tactgcgggtg	acggctgtta	180
agcggttacg	tacctccacg	gcactcaagg	aattaaatcc	cgaatcggca	aacgcctggc	240
cagcgtcgaa	tccggcgagc	ccgtcgcgcc	ccagcaccgc	tgccggcatgc	tcacatacca	300
cctccatcgc	tgccggcgaat	tgctcgtcgg	ccgaccgacc	ggccagccgg	gcggcaaac	360
cggaaga						367

<210> 628

<211> 518

<212> DNA

<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (104)
<223> a, t, c or g

<220>
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<222> (114)
<223> a, t, c or g

<220>
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<222> (194)
<223> a, t, c or g

<220>
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<222> (358)
<223> a, t, c or g

<220>
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<222> (364)
<223> a, t, c or g

<220>
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<223> a, t, c or g

<220>
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<223> a, t, c or g

<220>
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<223> a, t, c or g

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<222> (448)
<223> a, t, c or g

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<222> (452)
<223> a, t, c or g

<220>
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<222> (465)
<223> a, t, c or g

<220>
<221> modified_base
<222> (492)
<223> a, t, c or g

<400> 628
cctcatcata tgccgataga gctctacata ttcaggagat caccatggct cgtgcggtcg 60
ggatcgactc gggaccacca actccgtcgt ctcggttctg gaangtggcg accnggtcgt 120

53941100

cgctcgccaac	tccggagggc	tccaggacca	cccgtcaatt	gtcgcgttcg	cccgcaacgg	180
tgagggtgctg	gtcngccagc	ccgccaagaa	caggcagtga	ccaacgtcga	tcgcaccggtg	240
cgctcgggtca	agcgaccatg	ggcagcgact	ggtccataga	gattgacgca	agaaatacac	300
gcccggagat	ctcgcgcgat	tctgatgaac	tgaacgcgac	ccgaggctac	tcggtganga	360
catnacgacg	cgttatcaca	ccccgcctnc	ttcaatgacc	ccacgtcngg	caccaaggac	420
ccggcaatcg	cggctcactt	gngcgatngt	cnacaaccaa	cgcgncgcct	ggctacgggc	480
tcaacaaggc	anaagacaca	atccgctctc	gattggtg			518

<210> 629

<211> 435

<212> DNA

<213> Mycobacterium tuberculosis

<400> 629

ataactcaagc	ttatcgaggc	ggcgcataacc	gaagcgtggg	aaatccagac	cgaataccgc	60
gacgtgctgg	acactttggc	cggcgagctg	ctggaaaagg	agaccctgca	ccgacccgag	120
ctggaaagca	tcttcgctga	cgtcgaaaag	cggccgcggc	tcaccatggt	cgacaacttc	180
ggtggccgga	tcccgtcgga	caaaccgccc	atcaagacac	ccggcgagct	cgcgatcgaa	240
cgcggcgaac	cttggcccca	gccggtcccc	gagccggcgt	tcaaggcggc	gattgcgcat	300
gctacccaag	ccgctgaggc	cgcccgttcc	gacccggcca	aaccgggcac	ggcgccaacg	360
gttcgccccg	gggcaccacc	ggtccggtga	ccgcagtagc	gtccccccag	cctgactacc	420
gtgccccggc	gggct					435

<210> 630

<211> 398

<212> DNA

<213> Mycobacterium tuberculosis

<400> 630

tggccggggt	ggtagcccg	gtatggcaag	gttccgctca	atgtggttgt	gatgcagcag	60
gactacgttc	gcctcaatca	gctcaaacgt	cacccccgtg	gcgtgctgcg	cagcatgaag	120
gtcggcgccc	gcacgatgtg	ggcgaaggca	acaggtaaga	acctggtcgg	catgggtcga	180
gccctcattg	ggccgttgcg	gatcgggttg	cagcgcgccc	gagtgccggt	cgaactcaac	240
accgccttca	ccgatctttt	cgtcgaaaat	ggcgtcgtgt	ccgggggtata	cgctccgcgat	300
tcccacgagg	cggaatccgc	tgagccgcag	ctgatccggg	ctcgcgcgcg	cgtgatcctg	360
gcctgtggtg	gtttcgagca	taacgagcag	atgcgaat			398

<210> 631

<211> 464

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (39)

<223> a, t, c or g

<220>

<221> modified_base

<222> (58)

<223> a, t, c or g

<220>

<221> modified_base

<222> (67)

<223> a, t, c or g

<220>

<221> modified_base

<222> (100)

<223> a, t, c or g

<220>

<221> modified_base

<222> (108)

<223> a, t, c or g

<220>

<221> modified_base

<222> (187)

<223> a, t, c or g

<220>

<221> modified_base

<222> (198)

<223> a, t, c or g

<220>

<221> modified_base

<222> (194)

<223> a, t, c or g

<220>

<221> modified_base

<222> (319)

<223> a, t, c or g

<220>

<221> modified_base

<222> (371)

<223> a, t, c or g

<220>

<221> modified_base

<222> (391)

<223> a, t, c or g

<220>

<221> modified_base

<222> (460)

<223> a, t, c or g

<400> 631

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agcgganatg	gtggcg	ccta	tgcgtc	gacg	ctcacaaa	acn	gcggtgan	cgcg	cttctggtc	120
gtgcaccatc	gagccg	tgcc	agcccg	gccg	cgtgccgtca	gccgcatcca	ctggatgcct			180
tctcggngtt	tcaatc	angt	acangc	gacg	ttcgccacca	tcgtgccggg	gcacgggttag			240
cgagaaaaccg	ccgacttc	ac	cgattgc	ctc	ggatgacg	tcgaacagat	cgggcctatt			300
gtcgacagcc	agtgtgat	nc	gtatttg	ccg	ccgtgctcct	cgtcgcaacg	atgcgaacac			360
agatccgtgg	nggacgat	ag	cggctg	acaa	ngtgggggca	acacaatcac	atgccacatt			420
tcttcatttc	acgccc	acaa	cccagacttc	gtctc	gatgn	gccg				464

<210> 632

<211> 499

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (103)

<223> a, t, c or g

<220>
 <221> modified_base
 <222> (255)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (336)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (342)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (368)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (417)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (499)
 <223> a, t, c or g

<400> 632
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 ttgtacactt ctcgaacacc tcggcaccga caccaccacc gtngcttgaa caccgccaac 120
 atcggcagca gatcttgatg gtcctgggtga atcccacggt gactttggag tgggaaggcgc 180
 catactgatc gccgcgccag cacatgagct agcggcagga aaaccagcag ccgctcacct 240
 tgcgcagcag cgtcnggtga tatgcctggc gcccttaatc tcgtgaacca gttggattgg 300
 gtcaactggc agccttgggt ctccggtgggt gccgangtgt anataagctc ccgggtccgt 360
 caacgtantg cgcaggcggc ggttactcgg cgggtcaacg agccccgctc gtgagcnatc 420
 agcctttgga ccgaacggga ttcatactcc gcaggcggcc ctccgaaatc ggcacatgtc 480
 ctttgatcgt tcgcaacan 499

<210> 633
 <211> 343
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (178)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (235)
 <223> a, t, c or g

<400> 633
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 acgtggtcgc agttgaaccg cgggctttca gccagtcgcg ataatcggcg gaagtcggcg 120
 cctgccgccc caactagcgc gactcgccac ctagcacacc gatggcgaag gccatgtntc 180
 cggccacgcc gccgcggtgc atcaccaagt catcgactag gaagctaagc gacancttgt 240
 gcagggtgttc gggcagtagc tgctcggaaa atcggctgga aaccgcatca aatggtcgggt 300

ccaatcgaac cggttaccgc atcgtcaca aaatctccgt cct

343

<210> 634
 <211> 192
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 634
 ggggtctacaa ccaccgggtc tgactttctgg gctttccaccg ctcgcgccgt cgcgacaaac 60
 agcgcgggtcg aaccgacact cgttgtgatg tcccagctat cacctccggt aggcacccaa 120
 tcgaccctac ccggctatct caccctccgat ctccaggctc cgccgatcca tgcgcatccc 180
 ggtccggatc cc 192

<210> 635
 <211> 376
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 635
 caggcatgca agcttgctgt attccgtggc actgtcagac atatgcgccg ctcttcctca 60
 tcgctgcgct cggcatcgct gccggcggtc atggcgctac cctacccaag ccgaacgcga 120
 aacgagaacg tggtccatta ttaggggtgtg agcaccaata ccagattgct caccaggaac 180
 tcacgcagca ccgggacgga tgtcagccac cagccccatc tggggtggtg gcggggaaat 240
 acggctaacg cgggtccggt gccggcagcc cagcgcagac cctcggcggc ggacacggct 300
 aacaacgacg acccatagtt gttctttgcc ggatggccgt gtttgctgac atatcgggcg 360
 cggcgccggc gccgcc 376

<210> 636
 <211> 83
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (1)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (32)
 <223> a, t, c or g

<220>
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 <222> (61)
 <223> a, t, c or g

<400> 636
 nctacgctgc tgaatgttgt gcgccggagg anctcaagac ccacgcggtt gtacgcggac 60
 ntgcgacatg ttcaaccgcc gga 83

<210> 637
 <211> 319
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (241)

53941100

<223> a, t, c or g

<400> 637

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gatcgcttgg agcgtcgctc gaccgcccgc tcgagttggg tcataacgaa gtactgatgc 120
cgatcatgtc gacgtgtccg tcgcatcagc gtgcagcggc gacccctcga cgagcctcgg 180
tgccgcccgc gccagggcac cagctgtttt agcgcattgt gctccgcccg taataaagga 240
ngtcgggtcg ctccgctgct gtggttgccg aataacatct tcccttcctg caacaggatg 300
agaatggttt taattgctc                                     319
```

<210> 638

<211> 94

<212> DNA

<213> Mycobacterium tuberculosis

<400> 638

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ctaagctttc ggggccgccc ccactagtag cgcgttgccg gccccgccga cctagaatgt 60
tccgcccatt gccgtttcct cccgccgccc ggtt                                     94
```

<210> 639

<211> 122

<212> DNA

<213> Mycobacterium tuberculosis

<400> 639

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tctggtgccg ggtgtgccga cgggtccgct cgctctgtct tcagtgattc tgtgatgcga 60
ccggcaacgt cctcgttgtt cggtgtctat gtggtccgct tctccttggt ccgcatacga 120
tt                                     122
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<210> 640

<211> 210

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (8)

<223> a, t, c or g

<220>

<221> modified_base

<222> (10)

<223> a, t, c or g

<220>

<221> modified_base

<222> (136)

<223> a, t, c or g

<220>

<221> modified_base

<222> (139)

<223> a, t, c or g

<220>

<221> modified_base

<222> (150)..(151)

<223> a, t, c or g

<400> 640

53941100

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agaactggcg ctgctgccac ctggtcggcg catcggcact tcgaggactg gatttcgacg 120
cgtggcccgga cctgangtng gcggtggacn ngtgtgcacc cggttgattc ctcggccttg 180
ccgggatgcc acctgcgcct ggtggtcgat 210
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<210> 641
<211> 328
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (285)
<223> a, t, c or g

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<400> 641
cgtgaccgga cggggtgccg cgcaaccggt tcttgcccaa ttgccgggga ctggggctgg 60
agtataaagc gggcctgttg ccggaagata aagtcaaagc ggtgaccgag ctgaatcaac 120
atgcgccgct ggcgatggtc ggtgacggta ttaacgaccg ccagcgatga aagctgccgc 180
catcgggatt gcaatgggta gcggcacaga ctggcgctgg aaaccgccga cgcacattaa 240
ccataaccac ctgcgcggct ggtgcaaatg attgaactgg cacgnccact cacgccaata 300
tccgccagaa catcactatt gcgctggg 328
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<210> 642
<211> 553
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (21)
<223> a, t, c or g

<220>
<221> modified_base
<222> (236)
<223> a, t, c or g

<220>
<221> modified_base
<222> (251)
<223> a, t, c or g

<220>
<221> modified_base
<222> (473)
<223> a, t, c or g

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gtcggccggc cgggtgcggg cacaatcgcc gagttcggcg aacagatcct cgaagggtctt 120
cacggccagc gattgttgca cgtgtcagcc agccaagtca cggtgggttg acgccacacg 180
ttcgccaccg ccgcgccgcg cattagggca tcctaataata ggtaggcta ccctanttat 240
tcctgtggtc naaggaggca gccgaacgtg accttcccga tgtggttcgc agttccgccg 300
gaagtgccgt cagcatggct gtccaccggc atgggccccg gtccgctgct ggccgcggcc 360
agggcgtggc acgcgctggc cgcgcaatac accgaaattg caacggaact cgcaagcgtg 420
ctcgtgcggg tgcaggcaac tcgtggcagg ggcccagcgc cgacggttcg tcntcccat 480
caaccgttcc gtattggcta accacctgca cggtggcacc gcacaacgcc gccacaaacg 540
cgccccgta tac 553
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53941100

<210> 643
<211> 486
<212> DNA
<213> Mycobacterium tuberculosis

<400> 643
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gcacatggtg ggccggattc aacgcaacaa agccgggtcg ctggctcgct gggcgcacac 120
cgctcactcg gtggacagct cgcggttggg gaccgcgctg gatcgggagg ttgttgccgc 180
gctggccgaa caccgtcgtg gcgagcggct gcgggtttac gtccagggtca gcctcgacgg 240
tgacggatcc cggggcggcg tcgacagcac gacgcccggc gccgtagacc ggatttgcgc 300
gcaggtgcag gagtcagagg gcctcgaact ggtcgggttg atgggcattc cgccgctgga 360
ttgggacccg acgaagcctt tgaccggctg caatcggagc acaaccgggt gcgtgcgatg 420
ttcccgcacg cgatcgggtc gtcgcgggca tgtccaacaa cttgaaatcc cgtcaacatg 480
gtcgac 486

<210> 644
<211> 146
<212> DNA
<213> Mycobacterium tuberculosis

<400> 644
gcttcccctg atactcgacc agccccactc gggccaatac gtgaatgtcc tagcattttt 60
caccggttca cgggctagtc gagtagtaga cgattgatta gcctgaacgt acctccgacg 120
gccagctgac gaacgggttt gacgga 146

<210> 645
<211> 204
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (50)..(51)
<223> a, t, c or g

<220>
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<222> (55)
<223> a, t, c or g

<220>
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<223> a, t, c or g

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<222> (70)
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<220>
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<223> a, t, c or g

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<223> a, t, c or g

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<220>
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<220>
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<222> (145)
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<222> (148)
<223> a, t, c or g

<220>
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<222> (152)
<223> a, t, c or g

<220>
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<222> (161)
<223> a, t, c or g

<220>
<221> modified_base
<222> (173)..(174)
<223> a, t, c or g

<220>
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53941100

<223> a, t, c or g

<400> 645

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tcacgttaat	cancatcgcg	anttnctncg	tnttcgatta	nttctgctaa	cgnntctnnn	180
agtgccctgcg	ggtcgactct	agag				204

<210> 646

<211> 209

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (1)

<223> a, t, c or g

<220>

<221> modified_base

<222> (13)

<223> a, t, c or g

<220>

<221> modified_base

<222> (55)

<223> a, t, c or g

<220>

<221> modified_base

<222> (64)

<223> a, t, c or g

<220>

<221> modified_base

<222> (74)

<223> a, t, c or g

<220>

<221> modified_base

<222> (76)

<223> a, t, c or g

<220>

<221> modified_base

<222> (87)

<223> a, t, c or g

<220>

<221> modified_base

<222> (104)

<223> a, t, c or g

<220>

<221> modified_base

<222> (153)

<223> a, t, c or g

<220>

<221> modified_base

<222> (169)

<223> a, t, c or g

<220>
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 <222> (193)
 <223> a, t, c or g

<220>
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 <223> a, t, c or g

<220>
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 <222> (207)
 <223> a, t, c or g

<220>
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 <222> (209)
 <223> a, t, c or g

<400> 646
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 tgancagata tcgntnacac tgctcanaaa cttcggatca tcgntgatac acaggccaac 120
 gggtagcggt tgtccaaccg cttcgtcaac ganatgggat cgtgacganc ctacgctcgc 180
 aggatatgtc gcngaccngn tctaganan 209

<210> 647
 <211> 183
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (23)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (33)
 <223> a, t, c or g

<220>
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 <222> (38)
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<220>
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 <222> (56)
 <223> a, t, c or g

<220>
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 <222> (75)
 <223> a, t, c or g

53941100

<220>
<221> modified_base
<222> (81)
<223> a, t, c or g

<220>
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<222> (89)
<223> a, t, c or g

<220>
<221> modified_base
<222> (133)
<223> a, t, c or g

<220>
<221> modified_base
<222> (135)
<223> a, t, c or g

<220>
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<222> (143)
<223> a, t, c or g

<220>
<221> modified_base
<222> (154)
<223> a, t, c or g

<220>
<221> modified_base
<222> (169)..(170)
<223> a, t, c or g

<220>
<221> modified_base
<222> (178)
<223> a, t, c or g

<400> 647
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cgtatcactc cggcngacta nccgtatcng cgtcccgac cggtcaactg gtctagccac 120
accggggaga atncncgacc gnggctatcg accnatcacg gcttgtcggn aagatagnca 180
gcc 183

<210> 648
<211> 154
<212> DNA
<213> Mycobacterium tuberculosis

<400> 648
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gtacgaacca acctgcggtg cccaggccat tgacaatgtg ctggtcggcg cccgcgagtt 120
ctagcacagc aacgccgcgg ccaccacagg ggcg 154

<210> 649
<211> 219
<212> DNA
<213> Mycobacterium tuberculosis

53941100

<400> 649
cggtcgggtgt gcttggcggc gtcggtatca acaccgccc cgaatgggg cacaagaagg 60
attcgctgga gcggtggctg tccaagatca ccctcgccc gacctgctac gggcacttct 120
acatcgagca caaccgtggc catcacgtcc gggtgtccac accggaagac ccggcgtcgg 180
cgcggttcgg caaaactttg tgggatttcc cgcccccc 219

<210> 650
<211> 307
<212> DNA
<213> Mycobacterium tuberculosis

<400> 650
aataactcaag cttcgcgag gtggtggggc aggagcacgt caccgcgcc ctgtcgggtg 60
cgctggatgc cggccgatc aaccacgcgt acctgttctc tgggccgcgt ggctgcggaa 120
agacgtcgtc agcgcgtatc ctggcgcggt cgttgaactg tgcgcagggc cctaccgcca 180
acccgtgcgg ggtctgcgaa tcctgcgttt cgttggcgcc caacgcccc ggagcatcg 240
acgtggtaga gctggatgcc gccagccacg gcggcggtgga gcaaccccg gagctgcggg 300
accgcc 307

<210> 651
<211> 252
<212> DNA
<213> Mycobacterium tuberculosis

<400> 651
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cctggtctcg ttgggaata actcgttcgg cgtgcaggac gcggcgcaaa cgtacttcgg 120
catcaacgcg tccgacctga aattggcagc aaaccggcgc tgctggggccg ggcatgggtc 180
aatccgaaca agcacgtca accgtacac caaccccgaa gggccgctgg cccggcgga 240
ccttgctctc ca 252

<210> 652
<211> 402
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (207)
<223> a, t, c or g

<220>
<221> modified_base
<222> (232)
<223> a, t, c or g

<220>
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<222> (316)
<223> a, t, c or g

<220>
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<222> (322)
<223> a, t, c or g

<220>
<221> modified_base
<222> (324)
<223> a, t, c or g

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<220>
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<222> (330)
<223> a, t, c or g

<220>
<221> modified_base
<222> (342)
<223> a, t, c or g

<220>
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<222> (348)
<223> a, t, c or g

<220>
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<222> (351)
<223> a, t, c or g

<220>
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<222> (365)
<223> a, t, c or g

<220>
<221> modified_base
<222> (370)
<223> a, t, c or g

<220>
<221> modified_base
<222> (390)
<223> a, t, c or g

<400> 652
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ctgggcgtcg tgggtgcccg cctgcccgtg caggaactgg attttactgc catctctcgc 120
gaccctgagg tgggtccaggc ttacaacacc gaccactcg tgcaccacgg acgggttccg 180
gccgggattg gccgcgcgct gctgcangtg ggcgagacca tgccgcggcg ancaccggca 240
ttgaccgcgc cgctgctagt gctgcacggc accgatgacc ggctgatccc catcgaaggc 300
agccgtcgcc tggtcnaatg tntnggacn gccgacgtgc anctgaanga ntatccccgg 360
ctgtncacn aggtgttcaa cgaaccgga cgcaaccaag tg 402

<210> 653
<211> 429
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (181)
<223> a, t, c or g

<220>
<221> modified_base
<222> (304)
<223> a, t, c or g

<220>
<221> modified_base

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<222> (379)

<223> a, t, c or g

<400> 653

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ccacgggtcc gtgcaggaga cgtggctggc catgcaaagc gccgccgcct tatcaggaac 120
gccccggctt gtcggctttt cctgcatcga cacatttccg gaggtgttgt ggttggcgca 180
ncgcgcgaga caggcctggg atggcgtgcg catcgtcatc gggaatgcga tggcaacact 240
gaactacgag cgcattcctgc gccagcatga ctgtttcgac tacgtcgtcg ttggcgacgg 300
ggangtagcg ttcaccaagc tggccttggc cctggcgaat gacctgcggt tgacgactcc 360
cgggactaac ccgccgtant gagcaaggac agattctgcg cacaccctcc tcgctggctc 420
accttgaca 429
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<210> 654

<211> 353

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

<222> (109)

<223> a, t, c or g

<220>

<221> modified_base

<222> (151)

<223> a, t, c or g

<220>

<221> modified_base

<222> (208)

<223> a, t, c or g

<220>

<221> modified_base

<222> (247)

<223> a, t, c or g

<220>

<221> modified_base

<222> (265)

<223> a, t, c or g

<220>

<221> modified_base

<222> (300)

<223> a, t, c or g

<220>

<221> modified_base

<222> (307)

<223> a, t, c or g

<220>

<221> modified_base

<222> (345)

<223> a, t, c or g

<400> 654

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gccggtgatc tgggtggcca actcggcggg caccatctcc atcacgacng caaacgctcc 120
ggcttcggcg acagcgatcg cgtctgcgat ngtttgttcg gcggcgcttc cgcggccctg 180
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53941100

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cacccggaag ccgccaaggg tgttgacnct ttgcgggggtg aagccgatgt gtgccatcac 240
cgggatnccc gccgcgggtca gacangcgat ttgctcggcc acccgctcac cgccctcgan 300
cttgacngca tgtgcgccgc cgctcctgaa gaaaccgggtg gcgngngcaa ccc 353
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<210> 655
<211> 464
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (435)
<223> a, t, c or g

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actcgttgag cttggccagc gcgtcgtcgg ccggatcagc cagcacattc gcggccagga 120
cgccggagga gacggtgaag ctgcgaaaga aacctatggc ggaccgcatg attacacgcg 180
cgatcaacca cctctggtcg agcctcaaaa tttgcttcct taaacgggccc atcgacggat 240
gacgtcgagc tggtttaggt ctcaaacagg ttacgaaacg atctcggaat tgtccaaaag 300
gggaagttaa gaaaatggat agatttctac catttcgctg tggacgatcg tacttctgct 360
atagggctcc aggggcatcg acacgcaacg accttacgcg acaccggatc cgcgctggcg 420
gcggaacggc accangcgca accgaagggc caatccgaca tcgg 464
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<210> 656
<211> 515
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (140)
<223> a, t, c or g

<220>
<221> modified_base
<222> (257)
<223> a, t, c or g

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gcctggctca cttcaactac aacaaccgca aacaattgcc gccttcggat ccgagttcgg 120
ttgggtacgc ggcaatggan caccatttct cgggtgaatca gactattcct gactacttga 180
tcatccactc tgcacacgac ctgcgaaccc cgcgcggcct tgccgacctg gagcagctgg 240
cgcaacgtgt gagccanatc ccaggcggtg ccatggttcg cgggtgtgacc cggccaaacg 300
gggaaaccct tgaacaggcc cgggcgacat accaagccgg ccaagttggc aaccggctgg 360
gcggcgcgtc gcgaatgatc gatgagcgca ccggcgacct gaatcggctg gcatcggggtg 420
ccaacctgtt ggccgacaat ctcgggtgact tcgcgggtcaa gtcagccggg ccgttgcggg 480
tgtccgcagc cttgtccagc ccctcgctta ctcca 515
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<210> 657
<211> 403
<212> DNA
<213> Mycobacterium tuberculosis

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<400> 657
caggcatgca agcttttttga gcgtcgcgcg gggcagcttc gccggcaatt ctactagcga 60
gaagtctggc ccgatacgga tctgaccgaa gtcgctgcgg tgcagcccac cctcattggc 120
gatggcgccg acgatggcgc ctggaccgat cttgtgccgc ttgccgacgg cgacgcggta 180
ggtggtcaag tccggtctac gcttgggcct ttgcggacgg tcccgcacgt ggtcgcggtt 240
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gcgccgcgaa agcggcggggt cgggtgccat caggaatgcc tcaccgccgc ggcaactgcac 300
ggccagtgcc cgcggcgatt cagccatcgg gacatcatgc tcgcttcata ctccctcgacc 360
agtcggcgga acagctcgat tcccgggaacg cccacgcgatg gtg 403

<210> 658
<211> 444
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (296)
<223> a, t, c or g

<220>
<221> modified_base
<222> (314)
<223> a, t, c or g

<220>
<221> modified_base
<222> (367)
<223> a, t, c or g

<220>
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<222> (377)
<223> a, t, c or g

<220>
<221> modified_base
<222> (394)
<223> a, t, c or g

<220>
<221> modified_base
<222> (410)
<223> a, t, c or g

<400> 658
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gtagaaaaag atcggtgagc gcatcgattc gctccgccgg gtttgccgct gcggcgccgg 120
agctgccgtg accgtctatt tgggtgatca gatactgggc tagttcggtc ggggtgggggt 180
gatcgaagat cgcggtgggc ggcagcgta ctgcggtgac agctgttaag cggttacgta 240
tctccacggc actcaaggaa tttaatcccg aatcggcaaa cgcctggcca gcgtcnagtc 300
cggcagcgcc gtcncgccc agcaccgctg cggcatgctc acataccacc tcgatcgctg 360
cggcganttg ctcgtcngcc gaccgaccgg ccanccgggc ggcaaaccn gaagacccaa 420
gaattcatca ccaccatcgc tagc 444

<210> 659
<211> 437
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (188)
<223> a, t, c or g

<220>
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<222> (203)
 <223> a, t, c or g

<220>
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 <222> (257)
 <223> a, t, c or g

<220>
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 <222> (265)
 <223> a, t, c or g

<220>
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 <222> (287)
 <223> a, t, c or g

<220>
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 <222> (312)
 <223> a, t, c or g

<220>
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 <222> (322)
 <223> a, t, c or g

<220>
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 <222> (349)
 <223> a, t, c or g

<400> 659
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 gaccggcgat cgggcggggtg aacgcgtact ggggtgtcggg gtcgacgttc atcttcacca 120
 cgccgtagcg cagcgcctcc tcgatctccg acttaagcga acccgagccg ccgtggaaca 180
 cgaaatcnaa cggcttgggcgc tcngccggca gtccgagctt ggccgccgcc acctgttgcc 240
 cttgcgcaag gatgtcnggg cgaancttga cgttgccggg cttgtanacg ccatgcacgt 300
 tgccgaacgt cncggccagc angtatttgc cgtgctcacc ggcgcccanc gcctcgatgg 360
 ttttctcgaa gtcctccggg ctggtgtaca gcttctcgtt gatctcgttc gccacgccgt 420
 cctcttcgcc gccgacg 437

<210> 660
 <211> 422
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
 <221> modified_base
 <222> (132)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (195)
 <223> a, t, c or g

<220>
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 <222> (216)
 <223> a, t, c or g

<220>
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 <222> (219)
 <223> a, t, c or g

<220>
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 <222> (237)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (279)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (297)
 <223> a, t, c or g

<220>
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 <222> (303)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (335)
 <223> a, t, c or g

<220>
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 <222> (356)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (366)
 <223> a, t, c or g

<220>
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 <222> (395)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (410)
 <223> a, t, c or g

<220>
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 <222> (414)
 <223> a, t, c or g

<400> 660
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 atcagcgtga angaaagctc gtctggagac agcgggtcgg ccgaagccgc aagattggcc 180
 atcactagtg acganatcgt ggcgctctgc gagtancna agacagtgac gttgttnccg 240
 gcggcaattt gctgccgaat cgcactttcg agaatgacng caccctgcgc caccgangaa 300
 tcnaaagtga ggttcttgat cacgaccacc gggtnagacc cttggggcgt gaagancgcc 360

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tgcgcnataa caccgaggac gctgccactc atgtncagcg cgttcgcgan ctnacatat 420
ct 422

<210> 661
<211> 412
<212> DNA
<213> Mycobacterium tuberculosis

<220>
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<222> (14)
<223> a, t, c or g

<220>
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<222> (70)
<223> a, t, c or g

<220>
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<222> (269)
<223> a, t, c or g

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ccaacttgan cgcggtccgc agctgattca ccgtggcaac gccggccaac tgcgcataat 120
gcgcatccga accctcaccg gcccgccccg cgatcacccc aacctgatcc aacgacaacc 180
gccccctccg cataccccgg gcgcagcgcg gaaactccgg caaccgcccgc gccaccgtgg 240
cgatcggttg ggcgttgcct gacgaacanc ccattctcca ggccaccaac cccgccaccg 300
accgcgcccc cgtcacaccc cacaaccgct cgcgatccag ctccagccacg atctccacaa 360
tgcgcccatt aatcgcatcg cgctgaacgg gcaactccgc caactcctcc aa 412

<210> 662
<211> 467
<212> DNA
<213> Mycobacterium tuberculosis

<400> 662
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tggtacccat ccgtgataca ttgaggctgt tccctggggg tcgttacctt ccacgagcaa 120
aacacgtagc cccttcagag ccagatcctg agcaagatga acagaaactg aggttttgta 180
aacgccacct ttatgggcag caaccccgat caccgggtga aatacgtctt cagcacgtcg 240
caatcgcgta ccaaacacat cagcatatg attaatgtt tcaattgtat aaccaacacg 300
ttgctcaacc cgtcctcgaa tttccatatc cgggtgcggt agtcgccctg ctttctcggc 360
atctctgata gcctgagaag aaaccccaac taaatccgct gcttcaccta ttctccagcg 420
ccgggttatt ttctctgctt ccgggctgtc atcattaaac tgtgcaa 467

<210> 663
<211> 452
<212> DNA
<213> Mycobacterium tuberculosis

<220>
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<223> a, t, c or g

<220>

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<222> (147)

<223> a, t, c or g

<220>

<221> modified_base

<222> (189)

<223> a, t, c or g

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<222> (200)

<223> a, t, c or g

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<222> (202)

<223> a, t, c or g

<220>

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<222> (210)..(211)

<223> a, t, c or g

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<223> a, t, c or g

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<222> (226)

<223> a, t, c or g

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<221> modified_base

<222> (228)

<223> a, t, c or g

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<222> (237)

<223> a, t, c or g

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<221> modified_base

<222> (244)

<223> a, t, c or g

<220>

<221> modified_base

<222> (268)

<223> a, t, c or g

<220>

<221> modified_base

<222> (279)

<223> a, t, c or g

<220>

<221> modified_base
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 <223> a, t, c or g

<220>
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<220>
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<220>
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 <223> a, t, c or g

<220>
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<220>
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<220>
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<220>
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<220>
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 <222> (427)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (434)
 <223> a, t, c or g

<220>
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 <222> (448)
 <223> a, t, c or g

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 ancgccacct cccgggcgga actccacggc gtggatnaag gtaccggccg ggatgttgcg 120
 caatggcagg ttgttgcccg gcttgangtc cgcgttagcg ccggattcca ccacatcccc 180
 ttgcgaaant ccgttgggtn cnatgatgtn ncgcttctcc ccntcnanat aatggancaa 240
 cgcnatccgt gcggtacggg tcgggtccta ctccatgtnc gcgaccttgg cgttganacc 300
 atctttgtca ttgcggcgaa agtcnatcat ccggttnagcn cgcntatgan cgccgccttt 360
 gtgccgggtg gtaatccggc catgcgcntt gcgtccaccg cgaacgtgca acgggggnc 420
 caacganttc tccnggggtg aaccggtnat ct 452

<210> 664
 <211> 93
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 664
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 acgtgagccc gctcacttgc tgggtaagcg tcg 93

<210> 665
 <211> 352
 <212> DNA
 <213> Mycobacterium tuberculosis

<220>
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 <222> (47)
 <223> a, t, c or g

<220>
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 <222> (67)
 <223> a, t, c or g

<220>
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 <222> (70)
 <223> a, t, c or g

<220>
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 <222> (100)
 <223> a, t, c or g

<220>
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<220>
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<220>
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<220>
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 <222> (175)
 <223> a, t, c or g

<220>
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 <222> (182)
 <223> a, t, c or g

<220>

<221> modified_base
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<220>
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<222> (218)
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<222> (221)
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<220>
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<223> a, t, c or g

<220>
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<220>
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<220>
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<220>
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<220>
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<220>
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<223> a, t, c or g

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<220>
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<222> (342)
<223> a, t, c or g

<400> 665
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ctggagcttc ggccaantca tcgcctatgc ctgcgcggggg gtgacgctga ncccnggtga 180
cntgttcngc tcnggcacgg tgcccacctg cacgctcnc naacacctca ngccaccgga 240
atcattcccn ggctggctgc acganagcga nnttgtcncc ctccaagtct aaaggctggg 300
cgananaagc anaacgtccc gacnaacggc actccttttc cntttgctct tc 352

<210> 666
<211> 448
<212> DNA
<213> Mycobacterium tuberculosis

<220>
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<223> a, t, c or g

<220>
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<222> (289)
<223> a, t, c or g

<220>
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<222> (353)
<223> a, t, c or g

<220>
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<222> (390)
<223> a, t, c or g

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aaataactgc tctcgggtta caccxaaaca gcgcaatatg gcgaaaaacg gtcgccggtg 180
cacgacatta aatgtcacgg tattgtagat taaaaagata cccaccaaca angcaatcaa 240
actgagagcg gttaaattga ccgtaaaagc gtccgtcatc tgtttgacng tgtcccgttg 300
ggtatccgac gtttccatac gcacaccggc cggcagtcct tgttggatgc gtnttgcaat 360
ggcctcatct ttgatgatca aatcgatgtn gctcagtcct ccgggcatat ggaacaactc 420
ttggggccgtg gaaatatcag caatgata 448

<210> 667
<211> 386
<212> DNA
<213> Mycobacterium tuberculosis

<220>
<221> modified_base
<222> (242)
<223> a, t, c or g

<400> 667
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53941100

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cccatccccg ggtgaccgcg cagctggctg gtcaggccgt cggagctttc gggagagctcg 180
acatcgctcg caacaacgtt ggcggcacca tgcccaacac gctgctaagc acctcgacca 240
angacctcgc ggacgccttc gccttcaacg tgggcaccgc ccacgcgctg accgtcgcgg 300
cggtgccggt gatgctggaa cactccggcg gcggcagcgt gatcaacatc agctccacca 360
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<220>
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 <223> a, t, c or g

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 <222> (267)
 <223> a, t, c or g

<220>
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 <222> (302)
 <223> a, t, c or g

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ggttatggcg cgggtaccgc gcagtgaagg gcnccgagg ggaatcancg ctttgtcgt 180
cgaggctgat tcgcccggga tcaccgtgga gcggcgcaac aagttcatgg gactgcgtgg 240
catcgaaaac ggcgtgaccc ggcttctcgc cgtcagggtg cccaaagaca acttgatcgc 300
anggaagcga cggcttgaag atcgcgctga ccacactcaa cgccggacgg ctgtccctac 360
cggcgatcca accggagt                                     378

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 <212> DNA
 <213> Mycobacterium tuberculosis

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 <222> (285)
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gctggcaaga cagtggtcgg cgagttcgcc gtgcacctgg cgctggcggc cggcagtaaa 180
tgtttctaca ccacgccgct gaaagccctg agcaacaaaa agcacaccga tctcacagca 240
cgctacggcc gtgaccagat ctggctgctg accggtgacc tgtcngtcaa cggcaaccgc 300
cggtggtggt gatgaccacc gaaatgctgc gcaacatgct ctac                                     344

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<210> 670

<211> 411
 <212> DNA
 <213> Mycobacterium tuberculosis

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 <223> a, t, c or g

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 <222> (179)
 <223> a, t, c or g

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 <222> (183)
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 <223> a, t, c or g

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 <222> (215)
 <223> a, t, c or g

<220>
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 <223> a, t, c or g

<220>
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 <222> (271)
 <223> a, t, c or g

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 <222> (396)
 <223> a, t, c or g

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 gcggcaaggc gtcngtcggg cccagccgcg gcaatgcggg tacccgggag cgcgggtcng 180
 tanaccancg ctggactgcg tcgcgcggtg cgtcnacntc aaagtccccg gcgtcccata 240
 tcgcgtatga cgcgggcgcg cccggcacca ngggtgccga tccggccgtc tcgaacacca 300
 ccggcccggc agccgccgcg ggtccggcag cnaacccgcc cgcgccgata cccgctgccc 360
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<210> 671
 <211> 473
 <212> DNA
 <213> Mycobacterium tuberculosis

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<220>
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 <222> (247)
 <223> a, t, c or g

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 <223> a, t, c or g

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 <222> (457)
 <223> a, t, c or g

<220>
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 <222> (468)
 <223> a, t, c or g

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 gggcacctcg aaccggcgct gcgagtnacg ccacgcgatc gtgttgccct tcgcgtcgac 180
 catcgtcgat accgcaggca cttgcccctc gagcagctgg gccgagccgt tggcaacgac 240
 ctcaangaca cgattggaca tcagccctag cccgcctgcg aacgggaacg tcagcgcagt 300
 ggcgacgaca ctggccaaca gacagcaccg agccagcttc agaacgggtga tcgcggccgg 360
 gaagcgctcg ggcattgcgt ctacagtagc gacctcctgt cactccacgt gccgctcggc 420
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<210> 672
 <211> 357
 <212> DNA
 <213> Mycobacterium tuberculosis

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<220>

53941100

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<222> (293)

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<400> 672

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gcaccagtgc actgcccttc ttgtgcacgt ngccgcgata ctggatggtc ttgatgatcg 180
acgantaggt cgacgggcgg ccgatgcccc gctcctcgag cgctttgacc agcgacgcct 240
cngtgtnncg ggccggcggg ttggtggcat ggccgtcttg ggtcaactcg acnatgtcca 300
accgttgacc cggggtcaga tggggcagtc gccgctcggc atcgtcagcc tcgccgc 357
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<210> 673

<211> 402

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> modified_base

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<220>

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<222> (227)

<223> a, t, c or g

<220>

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<222> (240)

<223> a, t, c or g

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<222> (247)

<223> a, t, c or g

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<222> (270)

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<222> (369)

<223> a, t, c or g

<400> 673

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tcggcctggc gatgggtgac gctggcggct acaaggcctc cgacatgttg ggcccgaagg 180
aggaccggc gtggcagcgc aacgacccgc tggtgaacgt cnggaanctg atcgccaacn 240
acaccncgt ctgggtgtac tgcggcaacn gcaagccgtc ggatctgggt ggcaacaacc 300
tgccggccaa gttctcgag ggcttcgtgc ggaccatcaa catcaagttc caagacgcct 360
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<210> 674

<211> 336

<212> DNA

<213> Mycobacterium tuberculosis

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<220>
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 <223> a, t, c or g

<220>
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 <222> (303)
 <223> a, t, c or g

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 ttcccgctcgc gcagctcggc ggccccggtc agaaanaaat tgcgccaggc cgcacactcc 180
 gcgcccgtang ccagctgctc cagggtgtcg gcatagagcc cgcggggccgc agcgtgctcg 240
 ctgtcggcga acaccgcatg gtcgagaagc gttgccgccc aacggaaatc acctgcgtcn 300
 aangcttcgc gggccaactc cagcactcgg tcgatg 336

<210> 675
 <211> 405
 <212> DNA
 <213> Mycobacterium tuberculosis

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 gtagcggcct gcagaantgc atcctcggcg aancngacta ccggtggaca ncnacaagcg 180
 ccgccgaaca acgcactggc ccgagggatn ggcgtctatc ggccccgccc gtcgaactng 240
 gaacagacng tgcggttcta ccgtgatctg gtgggaatgc tcnaccanac cttcccnann 300
 gctacggaac nacggcgcgga tattcngccn tcccanctcg agcctgacnc tngatatcgt 360
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<210> 676
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acctgatgcc gatcangtcn acgtctccgt cgcnncaacg tgcagcggcg acccactcta 180
cnahtctcg gtnccgccnc ggccagngca ccaccagtga cnaatccntg cgccntcggg 240
ccnagcantc ccggtgcnac cgnggtgggt ccggcgatgg tnggggtgtnc tcnntacnng 300
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53941100

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aacgccattg ccggc 135

<210> 678
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<212> DNA
<213> Mycobacterium tuberculosis

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 ccganccatn tnttgcggcc gaccgcntnt cgtctcnacc gcanncccna tctcngccgc 180
 ncccgggtgga nctacngctn cttcgccatc tctcgccnat ggctccngcg nntcgcncaa 240
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 <213> Mycobacterium tuberculosis

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 caccaccacg ccgcagccct cgccgcgcac gaatccatcc gcgttgccgt cnaanctgtn 180
 gcatcgggtc gtcggtgaca gcgccgacca cttggacagc gcgatggcgg tgaacggtna 240
 ntaggtgacc tgccnccncg cccgccaatg cccacctccg cttcacncat gcgaatgggtc 300
 tgacacgcn agtgaattgc caccagcgac aacaaaaatc ggtatctncn gcgacggcgg 360
 acacgcnatc ccnactgata ctcatccgc cccaccgctt gnantccgg gttccngtgc 420
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ggtgtgaant	tgtggaccnc	caacggtgtg	gtagcggacc	tgctantggt	tatggcgcgg	180
gtaccgcgca	gtgaanggca	ccgaggggga	atcancgcct	ttgtcgtcta	ngctgattct	240
cccgggatca	ccntggagcg	cncncnant	tcatgggact	gcgtggcatc	caanacggcg	300

53941100
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 gaanatcgcg ctgatcncac tcaacgcccg acgctgtcct accggcgatc gcaccggant 420
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 gaagtgcanc ctgcgcgaaa cggagtagcg tggacaacga aaagcgccgc cgaacnacgc 180
 actggcccga gggattggcg tcaatcggcc ccgcccgtcg aacttggaag anacantgcg 240
 gttctaccgt gatctggtgg gaatgctcca acnnaccttc nccgaaagct acggaagcna 300
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<210> 683
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tccaacanng	ancaacgtgc	acgggcgag	tngtnccgcc	acttcgncna	tgacgggggtc	180
gatccnttcg	acgtccgtcg	ccgcgtcgg	cgagtggcg	tcacnctccn	ngtactcgac	240
cncacngacg	agaggactcg	ancccatcta	cgtgtggacg	aaacanatct	tctgtccnac	300
gactacacca	ccacccaggc	catcgccgnc	gcccgcgang	ccccttcgac	gccntactgg	360
tccngnggng	gcgctctccg	gttgtctnnc	ncntgncgtg	ttccttcacn	cactgcccna	420
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<211> 382

<212> DNA

<213> Mycobacterium tuberculosis

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 cgcgtgcctg tggctgatgc tgaacctcac cgcgttgact tggatccggt tcgggatctg 180
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 tcggcaagcn cnananaacg cgacccggag gtgttgaact agcttcgccg cgtatttaca 300
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anggtgccct	tccantccac	gccgctgtgg	tcggcgaacg	ctnatcttca	atcgagacca	180
tcgccagctt	catcntgttg	gcgatcttgt	cnnacggcac	ctcnaaccgg	cgctnctagt	240
acnccacncn	atcntgttnc	cttcncgctc	acatcctcga	tncncntgc	actttccctc	300
gancncctgg	gccgagccgt	tggcantnac	ctcngagccc	cattggacat	cancncancc	360
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 <213> Mycobacterium tuberculosis

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 gaccnaaatg ctgctcnagc agaccgggta ccnnnaacnc cncctcntga cngcaccagt 180
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<210> 687
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 <222> (364)
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 acggaatgnc ggtaagtctg gtcggcaacc tggcccgtg cgggttgggt tcggattcgc 180
 tcggctanta aggtgctcgc ctggtgtnac nactaatcnc natatacnct tancgggagt 240
 ngncgtccc atcctngccc tgccgcnggc gatcncgttc gcancaccgc caccggaact 300
 cncaangtgc gctcatcggg ctctacgcgc catcttcccc ggattcttcg cggcngngtn 360
 ccnggggacc ccggactgtg acnggcccaa cggctcatca tcg 403

<210> 688
 <211> 356

<212> DNA
 <213> Mycobacterium tuberculosis

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 <222> (38)
 <223> a, t, c or g

<220>
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 <222> (177)
 <223> a, t, c or g

<220>
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 <222> (192)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (209)
 <223> a, t, c or g

<220>
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 <222> (229)
 <223> a, t, c or g

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 <223> a, t, c or g

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 <222> (254)
 <223> a, t, c or g

<220>
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 <223> a, t, c or g

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 ccgagcgcgg tcacgggtctt tgcaccggga cgacgcatac cggcagcgcg aacatcnccg 180
 cgggctgcag cntgaacgtc caataccant cnaacagtgt ccgcgcgtna aaacccganc 240

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cggcgggtcgc ttcngtaatc aacggctcct ggcgaaccag ctgcaagtcg ccggtgccac 300
cggcggttgac gatcttgatg tctgcanct cgcgcaccag ctcgacggcc cgggca 356
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<210> 689
<211> 439
<212> DNA
<213> Mycobacterium tuberculosis

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caattaacga atccaccatc ggggcagctg gtgtcgataa cgaagtatct tcaaccggtt 120
gagtattgag cgtatgtttt ggaataacag ggcgcagctt cattatctaa tctcccagcg 180
tggtttaatc agacgatcga aaatttcatt gcagacaggt tcccaaataa aaagagcatt 240
tctccaggca ccagttgaag agcgttgatc aatggcctgt tcaaaaacag ttctcatccg 300
gatctgacct ttaccaactt catccgtttc acgtacaaca ttttttagaa ccatgcttcc 360
ccaggcatcc cgaatttgct cctccatcca cggggactga gagccattac tattgctgta 420
tttgtaagc aaaatacgt 439
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<210> 690
<211> 442
<212> DNA
<213> Mycobacterium tuberculosis

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<220>
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<222> (35)
<223> a, t, c or g

<220>
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<222> (139)
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<223> a, t, c or g

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<222> (378)

<223> a, t, c or g

<400> 690

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cgggacctcg tcggcatctt ccatagcccc ccacaccttc agttgctcac cggaatccaa 120
ccggtanaag gtcggcganc gctcngcatt ggtcatcggg atatgccgct cgggacggtc 180
anagccctcg ggtccggcca gcactccgca ggcttcgctc ggggtggctcg gacgcgcatg 240
ggccaccatc gcattcacca ggtctgcgcg aatcaccagc acgtanacgg ttcctttcct 300
aagcaacacc gaantttcag gacccgaatg ctccgggaaa catgtcacgg taggtcggtg 360
ttccggctac cggctganca ttgagcacgc cggccagcac cgcacgaacc aggcaatcag 420
ccgccgccgc acccgaccgc gg 442
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<210> 691

<211> 365

<212> DNA

<213> Mycobacterium tuberculosis

<400> 691

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caggcatgca agcttgatgc cgccgaaacc gagcgtgagc acgccgccag ccaccacgcg 60
cgggtcgggc gccgggcccg ggccgccagg ctgctccgct cggtgatggc acgccaccgc 120
gacaccacc ggctgcgcta cgtcgagcca taccggggcg agctacatcg gctcggccgc 180
ccagtgttcg ggccctcttt cgaggtcgag gtcgataccg atttgcgcat ccgcagccgc 240
accctggacg acagaaccgt gccctacgaa ttgcttgctc ggcggggcca aagaacagct 300
tggcatcctg gcgcgattgg ccggcgcggc gctggtcgcc aaggaagacc cgttccggtg 360
ctgat 365
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<210> 692

<211> 307

<212> DNA

<213> Mycobacterium bovis

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<221> modified_base

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<223> a, t, c or g

<220>

<221> modified_base

<222> (94)

<223> a, t, c or g

<220>

<221> modified_base

<222> (142)

<223> a, t, c or g

<220>

<221> modified_base

<222> (149)

<223> a, t, c or g

<220>

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<222> (163)

<223> a, t, c or g

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<222> (197)
<223> a, t, c or g

<220>
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<222> (306)
<223> a, t, c or g

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gcgggcgcctt ttcgacggcc gcgaaccacc gganatttcc tgtgatttca ctgcatgcgt 120
accatctggc acaattgagc anttgtctnt cgcggtgggc ggnccgggtg cgtgccgcct 180
gctgcganat gcaccantaa gcccgaaccc accggcttgg tgaccaccgc acgctgcgtg 240
tgggggggtaa ccactccgcg accccaagga tggtcatttc caatgaaccg gctggacttc 300
gtccana 307

<210> 693
<211> 414
<212> DNA
<213> Mycobacterium bovis

<400> 693
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tgaccgcgtt tggctctacc cactctttga gtggcgccgt cgctgtgcc ccatcgggtg 120
tcatgacgaa cgcttcgaaa gacttcctct tgtgagccgg aatgtctgcg taaagaagtt 180
ccatgtccgg gaagtagacc cggtcgccct ccacgtggta ctcttcgag gtccgcttct 240
cgccggatcc gataaacacc ggccccaggc accgcagcgt gagttcgaac ggcttcaggt 300
aggtgttcat gcggcggact ccgggagtgc gagaaatagc ggtcgcgcgt agctgtagac 360
cggatggttt ccgccaggc tgacgtcgaa gatgcctcct tggaaggggc gcga 414

<210> 694
<211> 256
<212> DNA
<213> Mycobacterium bovis

<220>
<221> modified_base
<222> (176)
<223> a, t, c or g

<400> 694
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cttccttttc ggccgcaaca tgagccagcc tctcgtcggc ggtcgggtgc aggtgctcgg 120
gcagctcggc cgcgacagcc gcctgaccct gaaaccagct tccatatccc gcgacnaacg 180
acgccagtcc gctacgtaac ccctccgcga ctgtccatgg acaacagcgc gttctccacc 240
gaccgggccc ggggtg 256

<210> 695
<211> 328
<212> DNA
<213> Mycobacterium bovis

<220>

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<221> modified_base
<222> (62)
<223> a, t, c or g

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cggcgaccgt cgtcatggtc gacacccacg acggaagac gcagatcgcc gtcaagcatg 180
tgtgccgcgg attatcagga ctgacctcct ggctgaccgg catgtttggg cgcgatgcct 240
ggcgcggcgg cggcggtggt gtggtcgggt cggatagcga ggtcagcgaa ttctcgtggc 300
agctcgaaag ggtcctgccg gtgccgggt 328

<210> 696
<211> 278
<212> DNA
<213> Mycobacterium bovis

<220>
<221> modified_base
<222> (31)
<223> a, t, c or g

<220>
<221> modified_base
<222> (42)
<223> a, t, c or g

<400> 696
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ttcacctcgt aacctcgatg cttagcagga tccagcttga ccgcgtttgg ctctaccac 120
tctttgagtg gcgccgtcgc ctgtgccccca tcggtgttca tgacgaacgc ttcgaaagac 180
ttcctcttgt gagccggaat gtctgcgtaa agaagttcca tgtccgggaa gtagaccggg 240
tcgccctcca cgtggtactc cttcgaggtc cgcttctc 278

<210> 697
<211> 264
<212> DNA
<213> Mycobacterium bovis

<220>
<221> modified_base
<222> (257)
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<400> 697
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atttcactgc atgcgtaccg tctggcacia ttgagcagtt gtctgtcgcg gtggtcggcc 120
gggttgctg cgcctgctg cgagatgcac caataagccc gaaccaccg gcttggtgac 180
caccgcacgc tgcgtgtggg gggtaaccac gccgcgaccc caaggatggt catttccaat 240
gaaccggctg gacttcntca acaa 264

<210> 698
<211> 169
<212> DNA
<213> Mycobacterium bovis

<400> 698
aacagcgcgg ttgaactgat aggtgcggcc cggctcgagc aggccgggccc atttgttcga 60
tgccggttacc gaaagatctc ttcgggtgacc tgcccggcgc cggccagctc ggcccagtg 120
ccggcggttg ccgccgggc gacgatcttg gcgtccacgg tggtcgggg 169
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<210> 699
 <211> 256
 <212> DNA
 <213> Mycobacterium bovis

<220>
 <221> modified_base
 <222> (151)
 <223> a, t, c or g

<400> 699
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 ttccacatca acgaccattt cggccagctt gcggcgcatc agcggcttgt cgatgagcgc 120
 cccaccgaat gcccggcgct gcccggcgta ncacagcgat tcgaccagcg cgcggcgcgc 180
 gttgccgagg gcgaacgaag cggtgcccga cgcgaatctg ttggtcagct ccatcatgcg 240
 ggtgagtccc ttgccg 256

<210> 700
 <211> 292
 <212> DNA
 <213> Mycobacterium bovis

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 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (148)
 <223> a, t, c or g

<220>
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 cccatcgcc tgcaacacgg cggccagnac ccattggccg tcgcactcgt anagcaggta 180
 atcctcgtcg acggactcgg taaccaccgc cgccagctcc gctgccagggt cggcgggggt 240
 gacaccggcg ggcacgaggga tggacgacga cgcggtgctg acggcgccctg tc 292

<210> 701
 <211> 315
 <212> DNA
 <213> Mycobacterium bovis

<220>
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 <222> (13)
 <223> a, t, c or g

<400> 701
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 tgggggaggg ttctcggagg ccatctggga tgttgatgtc tgtcgatctt gagccgggtgc 180
 aactcgtcgg cccggacggt acgccgacgg ccgaacgccg ctaccaccgt gaccttctctg 240

53941100

aggaaacgct gcgttggctc tacgagatga tgggtgggtcac ccgcgagctg gataccgaat 300
tcgtcaatct gcacg 315

<210> 702
<211> 328
<212> DNA
<213> Mycobacterium bovis

<220>
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<222> (293)
<223> a, t, c or g

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cgagcaggcc ggccatttgt tcgatgcggt taccgaaaat ctcttcggtg acctgcccgc 120
cgccggccag ctcggcccag tgcccggcgt tggccgccgc ggcaacgatc ttggcgtcca 180
cggtggtcgg ggtcatgccc gcgagcagga tcggcgagcg gccggtcagc cgggtgaact 240
tcgtcgaag cttgaccctg ccgtcgggga ggcgaaccac ggtcgggtgc tancctccacc 300
aagccccggc aacctcgggg gtggcgcc 328

<210> 703
<211> 352
<212> DNA
<213> Mycobacterium bovis

<400> 703
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agcgaacacc gccggatgca gcgcaggtgc gtcgatgtgc tcacggaatc gccccggcac 120
cgcgatctcg aggatcacca gtgccacccc ctgcagcgcg acaccgacga ttccgtacac 180
cgccacgccg atcaggccct gggccagctg gcgtatatgg cggcgatggt gacgatggcc 240
agcgccacat acattgtggc ggccagaacc acggcggttg ggcggcggtc gatgaacact 300
aggcgacgca gatcgcccgg ggtcaacagg ttgaccatca gaaagcctgc ga 352

<210> 704
<211> 315
<212> DNA
<213> Mycobacterium bovis

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<223> a, t, c or g

<220>
<221> modified_base
<222> (31)
<223> a, t, c or g

<400> 704
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agcgccgcac caccagcgcc gacgctaagg atggaacgca cggcatcttc tgacgcgtaa 120
ccgcgttgtg atcgcgagct gaggagacgg tatgggggag ggttctcgga ggccatctgg 180
gatgttgatg tctgtcgatc ttgagccggt gcaactcgtc ggccccggacg gtacgccgac 240
ggccgaacgc cgctaccacc gtgaccttc tgaggaaacg ctgcgttggc tctacgatat 300
gatggtggtc acccg 315

<210> 705
<211> 390

53941100

<212> DNA

<213> Mycobacterium bovis

<400> 705

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tgacgcgcag ttcgtcgtcg tctagctcca ccatcgctg cacaccggcg gccaggaccc 120
attggccgctc gcactcgtag agcaggtaat cctcgtcgac ggactcggta accaccgccc 180
ccagctccgc tgccaggctc gcgggggtga caccggcggg catcgggatg gacgacgacg 240
cgggtgctgac ggcgccgtgc gcgacgctga gctcggacac agctagtata tgtagcctaa 300
cctacttaat gggtcgcagc cccccggggt cgtcgcatgt ccaacgttgc tcgactggaa 360
gaaaatgctc gtcggggagc aaatggcacc                                     390
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<210> 706

<211> 322

<212> DNA

<213> Mycobacterium bovis

<400> 706

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cccgggagc cgcaccattg ctgtcgccgc gtaacgccat cacggatgac gcgcagtctg 120
tcgtgtctta gctccaccat cgcctgcaca ccggcgccca ggaccattg gccgtcgcac 180
tcgtagagca ggtaatcctc gtcgacggac tcggtaacca ccgccgccag ctccgctgcc 240
aggtcggcgg ggttgacacc ggcgggcatc gggatggacg acgacgcggg gctgacggcg 300
cctgtcgcga ctctgagctc gg                                     322
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<210> 707

<211> 398

<212> DNA

<213> Mycobacterium bovis

<400> 707

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tctgacgcgt aaccgcgttg tgatcgcgag ctgaggagac ggtatggggg agggttctcg 120
gaggccatct gggatgttga tgtctgtcga tcttgagccg gtgcaactcg tcggcccggg 180
cggtagcccg acggccgaac gccgctacca ccgtgacctt cctgaggaaa cgctgcgttg 240
gctctacgag atgatggtgg tcacccgcga gctggatacc gaattcgtca atctgcagcg 300
ccagggggaa gctggcgctg tacacgccct gtcgcgggca ggaagccgcg cagggtgggtg 360
cggcggtctg cctacgcaaa accgactggt tgttcccc                                     398
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<210> 708

<211> 175

<212> DNA

<213> Mycobacterium bovis

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<223> a, t, c or g

<400> 708

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cgtttctgcg tctggttgag gccggctggg acnccgaggt ggctcgtcgg ccacatgggc 120
agcacaccac cgtggtgatg catctagacg tgcaggaccg tgccgctggc ctgca 175
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<210> 709

<211> 210

<212> DNA

<213> Mycobacterium bovis

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<400> 709
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aatcgcggtg tgcgttcttg agcatgagtc ggcgaccgtc gtcattggtc acacccacga 120
cggaaaagacg cagatcgccg tcaagcatgt gtgcccgcga ttatcaggac tgacctcctg 180
gctgaccggc atgtttggtc gcgatgcctg 210

<210> 710
<211> 312
<212> DNA
<213> Mycobacterium bovis

<400> 710
tacaagcggc acctcgccgg tgaactgacc gttcgcacgc tgcgcaccgc cgccggggcg 60
gtgctcggcg cgccggcgcc ccccgaggcc tgagagggga accaaccatg caggtgaaca 120
tgacggtaaa cggcgagccc gtcaccgccc aggtcgaacc ccggatgctg ctggtccatt 180
ttctccgtga tcagctgcgg ctcaccggaa ctcactgggg ctgtgatacc agcaactgcg 240
ggacatgcgt ggtggagggtc gacggcgctg cgggtgaaatc ctgcacgatg ctcgccgtga 300
tggcctccgg gc 312

<210> 711
<211> 255
<212> DNA
<213> Mycobacterium bovis

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<223> a, t, c or g

<220>
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<223> a, t, c or g

<220>
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<223> a, t, c or g

<220>
<221> modified_base
<222> (152)
<223> a, t, c or g

<220>
<221> modified_base
<222> (172)
<223> a, t, c or g

<220>
<221> modified_base

<222> (183)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (188)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (225)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (255)
 <223> a, t, c or g

<400> 711
 agcggctggt tacgactccc tgtttgtgat ggaccacttc taccaactgc ccatgttggg 60
 gacgcccgn c ntccgatgc tggaaagccta cactgccctt ggtgcgctgg ccncngcgac 120
 cgagcggctg caactgggag c nttgggtgac cngcaatacc taccgcaccc cnaccctgct 180
 ggncaaanat catcaccacg ctcgacttgg ttagcgccgg tcgancgatc ctcggcattg 240
 gaaccggttg gtttn 255

<210> 712
 <211> 304
 <212> DNA
 <213> Mycobacterium bovis

<220>
 <221> modified_base
 <222> (272)
 <223> a, t, c or g

<400> 712
 acgcgcgccg atcatatctg ctatggatgt acaattcagc tcttgctggt ataccagtat 60
 atgggtgtact atttgatcta tgctgacgtg tgagatgcgg gaatcggccc tggctcgact 120
 cggccgggct ctggctgatc cgacgcgggt ccggattctg gtggcggtgc tggatggcgt 180
 ttgctatccc ggccagctag ctgcgcacct cgggttgacc cgatcgaatg tgtccaacca 240
 tctgtcgtgt ttgcggggct gcgggctggt antcccaacc tatgagggcc ggcagggttcg 300
 gtat 304

<210> 713
 <211> 352
 <212> DNA
 <213> Mycobacterium bovis

<400> 713
 ccgcgctgct gctgacgtcg gtcgaacgtg cgacacgtct gcgaataccg gccgaacgct 60
 gggtttatcc acaggctggc accgacgccc acgacacacc ggccgctcgc gaccgccacc 120
 gactgcatcg gtcgacggcc attcggatcg ccggtgcccc ggcgctggaa ctggctgggc 180
 tggggctcga tgacatcgaa tacgtcgacc tgtattcgtg ctttccctcc gctgtccaag 240
 tcgccgcaat cgaactcggc ctggacaccg acgatcctgc ccgcccgtg accgtcaccg 300
 ggggcctgac cttcgccggc gggccgtgga gcaattacgt cacgcactcc at 352

<210> 714
 <211> 233
 <212> DNA
 <213> Mycobacterium bovis

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<220>
<221> modified_base
<222> (31)
<223> a, t, c or g

<220>
<221> modified_base
<222> (33)
<223> a, t, c or g

<220>
<221> modified_base
<222> (105)
<223> a, t, c or g

<220>
<221> modified_base
<222> (171)
<223> a, t, c or g

<220>
<221> modified_base
<222> (208)
<223> a, t, c or g

<220>
<221> modified_base
<222> (220)
<223> a, t, c or g

<400> 714
caggcgtgca atgacctgca ctgcgccgga nantccctaa cccactaaac cggggccgct 60
cacaagccgt gcagctcggc cagcgtcagg tgcgcgacca ggaantaaat gagcagaccc 120
gtgccgtcaa cgatgggtgc gatcatcggc cccgaaacga tggccgggtc natgcgcaac 180
ttcttcagca gcggcggaag gacggcancc accagcgacn accacaccac gat 233

<210> 715
<211> 336
<212> DNA
<213> Mycobacterium bovis

<220>
<221> modified_base
<222> (6)
<223> a, t, c or g

<400> 715
gcgaancact tcgtcaactt ccagggctgc ccgcaccaag tatttcgacg agtatttccg 60
tcggggccgcc gccgccggcg cgcggcaggc ggatcatcctg gcggcggggc tggactcgcg 120
cgcgtaccgg ctgccttggc ccgacgggac cacggttttt gagctggacc gcccgcaggt 180
ccttgatttc aagcgcgagg tgctcgccag ccacggtgcc caaccgcgcg ccctgcgccg 240
cgagatcgcc gtcgacctgc gtgacgattg gccacaagcc ttgcgggaca gtggtttcga 300
tgcggtgca ccgtcggcat ggattgccga agggct 336

<210> 716
<211> 273
<212> DNA
<213> Mycobacterium bovis

<220>

<221> modified_base
<222> (7)
<223> a, t, c or g

<220>
<221> modified_base
<222> (14)
<223> a, t, c or g

<220>
<221> modified_base
<222> (20)
<223> a, t, c or g

<220>
<221> modified_base
<222> (54)
<223> a, t, c or g

<220>
<221> modified_base
<222> (67)
<223> a, t, c or g

<220>
<221> modified_base
<222> (72)
<223> a, t, c or g

<220>
<221> modified_base
<222> (112)
<223> a, t, c or g

<220>
<221> modified_base
<222> (115)
<223> a, t, c or g

<220>
<221> modified_base
<222> (150)
<223> a, t, c or g

<220>
<221> modified_base
<222> (167)
<223> a, t, c or g

<220>
<221> modified_base
<222> (223)
<223> a, t, c or g

<220>
<221> modified_base
<222> (234)
<223> a, t, c or g

<220>
<221> modified_base
<222> (244)
<223> a, t, c or g

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<400> 716
ttggggcnttg cccncaatan ggccccaatc aaaagccgag caggtggaac ctancgcatt 60
cgctctntcg tntgtgcacc cgagccatcg cacgcgcggg aattcccgga tntcnccgta 120
ttctccggcg gccgggctaa cccatcccan gccgaacggt tggctcntgc cgtgggtccc 180
gtgttgggcg atcggggcggt caccgggggt gctcgggtgc ggntgaccat ggcnaactgc 240
cccnatgggc cgaccctggg gcagataaac ctg 273

<210> 717
<211> 327
<212> DNA
<213> Mycobacterium bovis

<220>
<221> modified_base
<222> (20)
<223> a, t, c or g

<220>
<221> modified_base
<222> (53)
<223> a, t, c or g

<220>
<221> modified_base
<222> (252)
<223> a, t, c or g

<400> 717
tgggtggaggt ccccaccaan acccggccgt aactctgctc acggaaatgc ggncaggccg 60
cgcgtagcac gtggtatccg ccataaagggt gcaccttaag cacggcggtcc caattctcga 120
acgacatctt gtggaagggt ccgtcgcgca agatcccggc gttgctcacc acaccgtgca 180
cggcgccgaa ttcgtcaagc gcggtcttga tgatgttcgc tgcgccgtcc tcggtggcga 240
cgctgtcggg anttggcgac cgccccggccc cccttgctgc gaaatctcgg cgacgacctc 300
atcggccatc gccgaaccgg gcgccccg 327

<210> 718
<211> 344
<212> DNA
<213> Mycobacterium bovis

<220>
<221> modified_base
<222> (32)
<223> a, t, c or g

<220>
<221> modified_base
<222> (55)
<223> a, t, c or g

<220>
<221> modified_base
<222> (59)
<223> a, t, c or g

<220>
<221> modified_base
<222> (83)
<223> a, t, c or g

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<220>
<221> modified_base
<222> (146)
<223> a, t, c or g

<220>
<221> modified_base
<222> (189)
<223> a, t, c or g

<220>
<221> modified_base
<222> (196)
<223> a, t, c or g

<220>
<221> modified_base
<222> (198)
<223> a, t, c or g

<220>
<221> modified_base
<222> (211)
<223> a, t, c or g

<220>
<221> modified_base
<222> (231)
<223> a, t, c or g

<220>
<221> modified_base
<222> (266)
<223> a, t, c or g

<220>
<221> modified_base
<222> (269)
<223> a, t, c or g

<220>
<221> modified_base
<222> (275)
<223> a, t, c or g

<220>
<221> modified_base
<222> (292)
<223> a, t, c or g

<400> 718
gccggccaaa ctggccggcg gggttgctgt cntcaagggtg gggtccgcca ccaanaccnc 60
actcaaggat cgcaaggaaa gcntcaagga tgcggtcgcg gccgccaagg ccgcggtcaa 120
ggagggcata gtccctggtg ggggancctc cctcatccac caggcccgcg aggcgctgac 180
cgaactgcnt gcgtcncnga ccggtgacaa ngtcctcggt gtccacgtgt nctccgaagc 240
ccttgccgct ccgttggtct ggatcncnc caacnctggc ttggacggct cngtggtggt 300
caacaaggct agcgagctac ccgccgggca tgggctgaac gtga 344

<210> 719
<211> 271
<212> DNA
<213> Mycobacterium bovis

<220>
 <221> modified_base
 <222> (8)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (37)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (91)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (100)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (121)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (136)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (179)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (196)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (253)
 <223> a, t, c or g

<400> 719
 cgaacctnaa ttgtcctgta atgcccagct caccaangca tggctggtgg ccggggcggt 60
 gaagccggcg tctgcggcac cgtccaactc natgtggatn gccggaatgg ggatgtccgg 120
 nacggcgaat ccgtanttcg cttgtcccgt gagggcccagg tggatggggg gaaggatcnt 180
 ggtgtccggg atgatnatgg ggccgatgcc gccggttgaa gtccactgga tcgggaattc 240
 gggaatcgtg atnccgacgt tcaggccgaa c 271

<210> 720
 <211> 302
 <212> DNA
 <213> Mycobacterium bovis

<220>
 <221> modified_base
 <222> (29)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (167)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (219)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (264)
 <223> a, t, c or g

<400> 720
 ctaacggaat gaaagccctg gtggccgtnt cggcgggtggc cgtcgtcgca ctgctcggtg 60
 tatcttccgc ccaagctgat cccgaggcgg atcccggcgc aggtgaggcc aactatggtg 120
 gcccccaag ttccccacgt cttgtcgatc acaccgaatg ggcgcantgg ggaattctgc 180
 ccagcctccg ggtctacccg tcccaagtgg ggcgtaacnc ctcccgccgc ctccgggatgg 240
 ccgctgccga cccggcctgg gccnaggttc tcgcgctgtc accggaagcc gacactgccg 300
 gc 302

<210> 721
 <211> 303
 <212> DNA
 <213> Mycobacterium bovis

<220>
 <221> modified_base
 <222> (12)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (17)
 <223> a, t, c or g

<220>
 <221> modified_base
 <222> (236)
 <223> a, t, c or g

<400> 721
 ccgcgggaca cncctcnatg ctgccgccat ggacgcggtc gaacgcaagc agctgatcga 60
 gctacaacgc cgcgcggaac gcttccgccg cgggcgtgac cgcattcccgt tgaccgggcg 120
 gatcgcggtg atcgtcgatg acggcatcgc caccggagcg acggccaagg cggcgtgcc 180
 ggtcgcccgg gcgcacgggtg cggacaaggt ggtgctggcg gtcccgatcg gccanacga 240
 catcgtggcg aagattcgcc gggtagcccg atgatgtggt gtgtttggcg acgccggcgt 300
 tgt 303

<210> 722
 <211> 280
 <212> DNA
 <213> Mycobacterium bovis

<220>
 <221> modified_base
 <222> (23)
 <223> a, t, c or g

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<400> 722
ctctgggacc ggccacgggtg ccnccggcgt tcccggacgt gctgcgccag gtgtccggcg 60
gccgcgtgca tgggtgtccc ggatcggccg ctggccagag cccaccgggtg aatctggcgc 120
ctggccgacc accgtgcgcc gtaggcttgc gatcgtgcag cgctggcgtg gccaggacga 180
gatcccgacg gattggggca gatgcgtgct caccatcggg gtatttgacg gcgtgcaccg 240
cgggcacgcc gaactgatcg cgcacgcggt caaaggcggc 280

<210> 723
<211> 333
<212> DNA
<213> Mycobacterium bovis

<220>
<221> modified_base
<222> (45)
<223> a, t, c or g

<220>
<221> modified_base
<222> (64)
<223> a, t, c or g

<220>
<221> modified_base
<222> (130)
<223> a, t, c or g

<220>
<221> modified_base
<222> (146)
<223> a, t, c or g

<220>
<221> modified_base
<222> (205)
<223> a, t, c or g

<220>
<221> modified_base
<222> (211)
<223> a, t, c or g

<220>
<221> modified_base
<222> (271)
<223> a, t, c or g

<220>
<221> modified_base
<222> (309)
<223> a, t, c or g

<400> 723
aataactcaag ctttcgtcag ttcatgtgcg cagcagacca acaanagcat cgggacatac 60
ggantcaact acccggccaa cggtgatttc ttggccgccg ctgacggcgc gaacgacgcc 120
agcgaccacn ttcagcaa atggccancg tgccgggcca cgagggttgg gctcggcgcc 180
tactcccagg gtgcggccgt gatnacatc ntcaccgccg caccactgcc cggcctcggg 240
ttcacgcagc cggtgccgcc cgcagcggac natcacatcg ccgcgatcgc cctgttcggg 300
aatccctcng gccgcgctgg cgggctgatt aac 333

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<210> 724
<211> 320
<212> DNA
<213> Mycobacterium bovis

<220>
<221> modified_base
<222> (112)
<223> a, t, c or g

<400> 724
tgccgcggat ttggctggct gcccaatatt cagaatcggg cttttctttt tgcgcgacaa 60
taaggtcaca gtaaaccctc gttttgtgag atgcggggcg ggccgggcga antcgacctc 120
gagtgaatgg atctcgagtg aatggacagg gcatcgccta cgagtcgcat ccccatccaa 180
cagaccgggtg ctcttgcacg ggaccctgaa ggtcccgcac ggaggggtgtg gttgccggcg 240
cggggtcacg gtgcggtagc gacgtagtgt ttgaacgaat ttcttgatgc tccaacctgt 300
ttggtgttca atccagttct 320

<210> 725
<211> 296
<212> DNA
<213> Mycobacterium bovis

<220>
<221> modified_base
<222> (3)
<223> a, t, c or g

<220>
<221> modified_base
<222> (24)
<223> a, t, c or g

<220>
<221> modified_base
<222> (58)
<223> a, t, c or g

<220>
<221> modified_base
<222> (60)
<223> a, t, c or g

<220>
<221> modified_base
<222> (77)
<223> a, t, c or g

<220>
<221> modified_base
<222> (219)
<223> a, t, c or g

<220>
<221> modified_base
<222> (229)
<223> a, t, c or g

<400> 725
aancttgccg gctcggccgg gtcnagcatc cagctgctcg gcaaggaggc cagctacnch 60
tcgctgcgta tgcccagcgg tgagatccgc cgggtcnacg tccgctgccg cgcgaccgtc 120
ggcgaagtgg gcaatgccga gcaggcaaac atcaactggg gcaaggccgg tcggatgcgg 180

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tggaagggca agcgcccgtc ggtccggggc gtggtgatna acccggtcna ccacccgcac 240
ggcggtggtg agggtaaaac ctccggcggc cgtcaccggg ttagcccggtg gggcaa 296

<210> 726
<211> 304
<212> DNA
<213> Mycobacterium bovis

<220>
<221> modified_base
<222> (2)
<223> a, t, c or g

<400> 726
antcgaaagt gaccatctct accttgagtg ccataaccgcc cgaccctatg cctcggatag 60
ctcggcggaa agaaacgctt gcagtgccgc cgaataggcg gctacgtcgt gagcgcccat 120
caactctcgc gcggagtgca tcgccagctg ggcggcgccg acgtcgaccg tggggattcc 180
ggtgcgcgcc gcggccaacg gcccgatcgt cgacccgcac ggcagatcgg cgcgatgttc 240
gtaacgctgc ataggcactc ccgcgcgctg gcaggccagt gcgaacgccg ccgcggtgac 300
tccg 304

<210> 727
<211> 318
<212> PRT
<213> Mycobacterium sp.

<400> 727
Pro Thr Gln Thr Leu Thr Gly Arg Pro Leu Ile Gly Asn Gly Thr Pro
1 5 10 15
Gly Ala Val Gly Ser Gly Ala Thr Gly Ala Pro Gly Gly Trp Leu Leu
20 25 30
Gly Asp Gly Gly Ala Gly Gly Ser Gly Ala Ala Gly Ser Gly Ala Pro
35 40 45
Gly Gly Ala Gly Gly Ala Ala Gly Leu Trp Gly Thr Gly Gly Ala Gly
50 55 60
Gly Ala Gly Gly Ser Ser Ala Gly Gly Gly Gly Ala Gly Gly Ala Gly
65 70 75 80
Gly Ala Gly Gly Trp Leu Leu Gly Asp Gly Gly Ala Gly Gly Ile Gly
85 90 95
Gly Ala Ser Thr Val Leu Gly Gly Thr Gly Gly Gly Gly Gly Val Gly
100 105 110
Gly Leu Trp Gly Ala Gly Gly Ala Gly Gly Ala Gly Gly Thr Gly Leu
115 120 125
Val Gly Gly Asp Gly Gly Ala Gly Gly Ala Gly Gly Thr Gly Gly Leu
130 135 140
Leu Ala Gly Leu Ile Gly Ala Gly Gly Gly His Gly Gly Thr Gly Gly
145 150 155 160
Leu Ser Thr Asn Gly Asp Gly Gly Val Gly Gly Ala Gly Gly Asn Ala
165 170 175
Gly Met Leu Ala Gly Pro Gly Gly Ala Gly Gly Ala Gly Gly Asp Gly

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180	185	190
Glu Asn Leu Asp Thr Gly Gly Asp Gly Gly Ala Gly Gly Ser Ala Gly		
195	200	205
Leu Leu Phe Gly Ser Gly Gly Ala Gly Gly Ala Gly Gly Phe Gly Phe		
210	215	220
Leu Gly Gly Asp Gly Gly Ala Gly Gly Asn Ala Gly Leu Leu Leu Ser		
225	230	235
Ser Gly Gly Ala Gly Gly Phe Gly Gly Phe Gly Thr Ala Gly Gly Val		
245	250	255
Gly Gly Ala Gly Gly Asn Ala Gly Trp Leu Gly Phe Gly Gly Ala Gly		
260	265	270
Gly Val Gly Gly Ser Ala Gly Leu Ile Gly Thr Gly Gly Asn Gly Gly		
275	280	285
Asn Gly Gly Thr Gly Ala Asn Ala Gly Ser Pro Gly Thr Gly Gly Ala		
290	295	300
Gly Gly Leu Leu Leu Gly Gln Asn Gly Leu Asn Gly Leu Pro		
305	310	315

<210> 728
 <211> 334
 <212> PRT
 <213> Mycobacterium sp.

<400> 728
 Pro Thr Gln Thr Leu Thr Gly Arg Pro Leu Ile Gly Asn Gly Thr Pro
 1 5 10 15
 Gly Ala Val Gly Ser Gly Ala Thr Gly Ala Pro Gly Gly Trp Leu Leu
 20 25 30
 Gly Asp Gly Gly Ala Gly Gly Ser Gly Ala Ala Gly Ser Gly Ala Pro
 35 40 45
 Gly Gly Ala Gly Gly Ala Ala Gly Leu Trp Gly Thr Gly Gly Ala Gly
 50 55 60
 Gly Ile Gly Gly Ala Ser Thr Val Leu Gly Gly Thr Gly Gly Gly Gly
 65 70 75 80
 Gly Val Gly Gly Leu Trp Gly Ala Gly Gly Ala Gly Gly Ala Gly Gly
 85 90 95
 Thr Gly Leu Val Gly Gly Asp Gly Gly Ala Gly Gly Ala Gly Gly Thr
 100 105 110
 Gly Gly Leu Leu Ala Gly Leu Ile Gly Ala Gly Gly Gly His Gly Gly
 115 120 125
 Thr Gly Gly Leu Ser Thr Asn Gly Asp Gly Gly Val Gly Gly Ala Gly
 130 135 140
 Gly Asn Ala Gly Met Leu Ala Gly Pro Gly Gly Ala Gly Gly Ala Gly
 145 150 155 160

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Gly Asp Gly Glu Asn Leu Asp Thr Gly Gly Asp Gly Gly Ala Gly Gly
 165 170 175

Ser Ala Gly Leu Leu Phe Gly Ser Gly Gly Ala Gly Gly Ala Gly Gly
 180 185 190

Phe Gly Phe Leu Gly Gly Asp Gly Gly Ala Gly Gly Asn Ala Gly Leu
 195 200 205

Leu Leu Ser Ser Gly Gly Ala Gly Gly Phe Gly Gly Phe Gly Thr Ala
 210 215 220

Gly Gly Val Gly Gly Ala Gly Gly Asn Ala Gly Trp Leu Gly Phe Gly
 225 230 235 240

Ala Gly Gly Ile Gly Gly Ile Gly Gly Asn Ala Asn Gly Gly Ala Gly
 245 250 255

Gly Asn Gly Gly Thr Gly Gly Gln Leu Trp Gly Ser Gly Gly Ala Gly
 260 265 270

Val Glu Gly Gly Ala Ala Leu Ser Val Gly Asp Thr Gly Gly Ala Gly
 275 280 285

Gly Val Gly Gly Ser Ala Gly Leu Ile Gly Thr Gly Gly Asn Gly Gly
 290 295 300

Asn Gly Gly Thr Gly Ala Asn Ala Gly Ser Pro Gly Thr Gly Gly Ala
 305 310 315 320

Gly Gly Leu Leu Leu Gly Gln Asn Gly Leu Asn Gly Leu Pro
 325 330

<210> 729
 <211> 650
 <212> DNA
 <213> Mycobacterium sp.

<400> 729
 gcggccgcaa ggggttcgcg tcagcgggtg ttggcgggtg tcggggctgg cttactatg 60
 cggcatcaga gcagattgta ctgagagtg accatatgcg gtgtgaaata ccgcacagat 120
 gcgtaaggag aaaataccgc atcaggcgcc attcgccatt caggctgcgc aactgttggg 180
 aagggcgatc ggtgcgggcc tcttcgctat tacgccagct ggcgaaagg ggatgtgctg 240
 caaggcgatt aagttgggta acgccagggt tttcccagtc acgacgttgt aaaacgacgg 300
 ccagtgaatt gtaatacgac tcactatagg gcgaattcga gctcgttacc cggggatcct 360
 ctagagtcga cctgcaggca tgcaagcttg agtattctat agtgtcacct aaatagcttg 420
 gcgtaatcat ggtcatagct gtttcctgtg tgaaattgtt atccgctcac aattccacac 480
 aacatacgag ccggaagcat aaagtgtaaa gcctgggggtg cctaagtgt gagctaactc 540
 acattaattg cgttgcgctc actgcccgtt ttccagtcgg gaaacctgtc gtgccagctg 600
 cattaatgaa tcggccaacg cgaaccctt gcggccgccc gggccgtcga 650

<210> 730
 <211> 8
 <212> PRT
 <213> Mycobacterium sp.

<220>
 <221> MOD_RES
 <222> (2)
 <223> Any amino acid

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<220>
<221> MOD_RES
<222> (4)
<223> Any amino acid

<220>
<221> MOD_RES
<222> (7)
<223> Any amino acid

<400> 730
Asn Xaa Gly Xaa Gly Asn Xaa Gly
1 5

<210> 731
<211> 9
<212> PRT
<213> Mycobacterium sp.

<220>
<221> MOD_RES
<222> (2)..(3)
<223> Any amino acid

<220>
<221> MOD_RES
<222> (7)..(8)
<223> Any amino acid

<400> 731
Gly Xaa Xaa Ser Val Pro Xaa Xaa Trp
1 5

<210> 732
<211> 29
<212> PRT
<213> Mycobacterium sp.

<400> 732
Gly Gly Ala Gly Gly Ala Gly Gly Ser Ser Ala Gly Gly Gly Gly Ala
1 5 10 15
Gly Gly Ala Gly Gly Ala Gly Gly Trp Leu Leu Gly Asp
20 25

<210> 733
<211> 45
<212> PRT
<213> Mycobacterium sp.

<400> 733
Gly Ala Gly Gly Ile Gly Gly Ile Gly Gly Asn Ala Asn Gly Gly Ala
1 5 10 15
Gly Gly Asn Gly Gly Thr Gly Gly Gln Leu Trp Gly Ser Gly Gly Ala
20 25 30
Gly Val Glu Gly Gly Ala Ala Leu Ser Val Gly Asp Thr
35 40 45

<210> 734
 <211> 21
 <212> DNA
 <213> Mycobacterium sp.

<400> 734
 agttagctca ctcattaggc a 21

<210> 735
 <211> 21
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22

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<400> 743
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